DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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R. P. EATON & CO., PUBLISHERS, OFFICE, 34 MERCHANTS' ROW. **MONTHLY.** SIMON BROWN, S. FLETCHER, } EDITORS.

THE DROUGHT AND THE GRASSES.

VERY protracted is the drought which now prevails throughout this part of the country. A drought, not only of the present year, but the continuation of one that commenced last summer, extended through the entire winter, the late spring, and now, in the last of July, is seriously affecting the crops.

This long-continued drought has materially affected the present grass crop. The roots of the best grasses have propably been destroyed, or greatly injured for the want of moisture, and from exposure during the last winter. The result is that hardy weeds have taken the place of clover, of timothy, redtop, and other valuable grasses, and a large portion of our fields are crowded with sorrel, white weed, dock-weed, and other worthless plants. We have never before known the fields to present such a poverty-stricken condition. On grounds that were sown with grass seed with the grain, last year, the drought killed the young grass, so that all sorts of rubbish and trash is triumphant,—the sorrel and whiteweed prevailing over all the rest.

Under these circumstances it becomes the farmer to commence cutting the grass early, before the weeds perfect their seeds, and to afford opportunity for obtaining a second crop of grass on lands that are sufficiently moist and rich to bring it. He can greatly promote his interests in this particular, by employing the excellent

Haying Implements and Machines,

which are now introduced all over New England.

The old hand scythe will never go out of date. It is indispensable, in most fields, near fences, around trees, and sometimes, where clover or grass is lodged, in open places.

There are now various patterns of the mowing machine. Most of them are so perfected as to cut one acre in an hour, as an average, and cut the grass well. This can be done with ease by two horses, and leave the driver sufficiently fresh to engage at once in tending the crop. On grounds that are smooth, there is little danger of accident in their use, and if taken care of properly, a machine will last for many years. It should always be housed when not in use.

In order to push the haying along at the most rapid rate, the TEDDER (from the word *ted*, to spread or turn, as Milton says, "The smell of grain or *tedded* grass") should at once follow the mowing machine. This machine has not yet come into general use, but is gaining popularity as its merits are better known. It is not uncommon in the haying season to have sudden showers in the middle of the day. Large quantities of hay are wet by these showers when it is in complete condition to go

into the barn,—and when all hands are engaged in getting it in. In many instances, hay thus wet, must lie over night as it was tumbled up to be pitched upon the cart, or as it was shaken out from the cock. In either case, the hay would be essentially improved by remaining so.

If the showers are of short duration, and the sun appear again, an hour's use of the tedder, in lifting the hay into the air and dropping it lightly again upon the sward, would shake out the rain and enable it to dry so as to be got in the same afternoon. Where fifty tons of hay are made, the saving in this particular alone would soon equal the cost of the machine.

The Horse Rake would follow in order after the tedder. Some farmers ascribe to it as much gain as to the mowing machine. Almost any person can rake, however, even children, while it is difficult to find mowers who are sufficiently strong to continue day after day to swinging the scythe, and who can mow rapidly and well.

In the delightful grass fields in Addison county, Vt., the horse rake was kept in motion, after the grass was dry, to the complete exclusion of the hand-rake; indeed, we did not see the latter at all, in the hundreds of acres over which we went. All the hay was got into windrows, and all the scatterings in loading were got together by the horse-rake.

Another improvement is in the style of the forks used. They were once made at the common smithy, and were too heavy and rough and imperfect in form. The handles were too large in some places and too small in others. The fork, of a proper form, may be lighter and yet stronger than an ill-shaped one. The forks then had but two tines. Now, many of them have three, and the third tine is a very great improvement on the old form.

The Horse Fork, for unloading the wagon, and conveying hay to the bays or scaffolds, proves of considerable service where barns admit of their use.

Hay Caps are of great assistance in curing the crop. If the grass can be wilted immediately after it is cut, the hay cocked and covered with caps, it will remain safe, even in a storm, and there is very little to be done for it afterwards in the way of turning and drying.

Many years ago, securing the hay harvest was considered the most laborious and critical work of the year. With the help of the machines mentioned above, it is not considered so now. Many farmers say that they consider the hoeing more laborious than the haying.

In a meadow directly before us as we write, covered with a growth of at least a ton to the acre, we have known the whole crop cut, cured and housed in *three day's* time, by the aid of machinery in the whole process.

CULTURE OF THE CABBAGE.

Few of the vegetables are of more consequence to the farmer than the cabbage. It is cheaply and easily raised, very productive, and can be preserved in its natural condition for eight or nine months in the year. It forms a highly nutritious and palatable article of food upon the table when boiled, and a refreshing salad when chopped and served with condiments, such as vinegar, pepper, mustard, &c., and used in a raw state.

It is important to the farmer in another respect. It is profitable as an article for market. The farmer who is at a considerable distance from cities, or manufacturing centres, may cultivate and send cabbage to market to as much advantage, perhaps, as those can who improve more costly lands and pay higher taxes, in the vicinity of a city. This is already done by some who reside fifty to seventy miles from a large market. In the autumn, what cabbages remains unsold are set in furrows in grass ground, and covered with forest leaves or straw to the depth of three or four inches, and light brush thrown over it to keep it in place. In this way they keep well, and in the latter part of March and in April and May, they are lifted, placed in barrels and sent to market. At these times, a cabbage which would bring but five or six cents in the autumn, would bring from ten to twenty cents in Boston, according to the supply that might be on hand.

The farmer, therefore, may find the cabbage a good market article upon which he can realize a profit in money, as well as furnish a wholesome article for his table.

But this is not all. There is no stock upon the farm but would be benefited by an occasional feed of cabbage. Swine like it, and thrive better when its fresh and succulent leaves form a part of their food. Poultry will leave grain of any kind in the winter season to peck at a head of cabbage. They

will keep in better health and produce more eggs when they have access to it. When at large in the summer, they eat grass, and will eat some kinds of hay every day in the winter if they can get it. Cabbage seems to supply the place of these, and to keep the fowls contented and thrifty. Those persons, therefore, who are engaged in feeding poultry, should provide them with cabbage plentifully.

All the neat stock are exceedingly fond of cabbage. If a cow breaks into the garden, about the first thing she makes for is the cabbage patch. Milk is largely increased in quantity by feeding cabbage to cows, but the quality may not be improved. They can be fed to milch cows, however, without detriment to the milk, by feeding them out just after the cows have been milked. Nothing can be more grateful or suitable for calves which are to be raised, as they can be easily masticated, and will supply the moisture which is lacking in dry hay. Making cabbage a portion of their food would be better than much meal. Sheep, oxen and horses would all be benefited by the use of cabbage when judiciously fed to them.

An acre of cabbage not uncommonly brings from $200 to $300, and sometimes as high as $500. A correspondent informs us that a neighbor of his realized $300 from an acre, that was in grass the previous year.

An observing writer says "there is no vegetable that can be planted after the first of July that will give so great a yield of fodder as cabbages; and no one who is likely to be short of pasturage, or winter feed, should neglect this highly important adjunct to his other crops. The notion that it should only be grown by the dozen for cooking in the kitchen is an old, and we may add, a foolish one. Grow them by the thousand, and after pasture fails, feed them to every domestic animal on the farm. When the ground freezes, pull up the crop and store it in the cellar or the barn, or under straw, until you can feed it out."

The cabbage requires a rich, moist soil, and is greatly benefited by the use of ashes, or alkali in some other form. Soap suds will promote their growth wonderfully. They should be hoed often. Some persons who raise cabbage largely say that salt, or a weak solution of potash, will prevent them from becoming club footed.

For the New England Farmer.

THE GARDEN IN AUGUST.

"O friendly to the best pursuits of man,
Friendly to thought, to virtue and to peace,
Domestic life in rural pleasure passed!
Few know thy value, and few taste thy sweets,
Though many boast thy favors, and affect
To understand and choose thee for their own."
—COWPER.

Rhyme and poetize as we may on the pursuits of the gardener, horticulturist and cultivator of the soil, the great majority only see, in actual life, toil, care and hard labor in obtaining the best products of the soil. To the ardent student of Nature it is quite different. He sees by study and observation very much that is not revealed to the ordinary laborer. To him every unobservable action and thing has a "time and purpose." He can draw instruction as well as recreation and amusement, from the revelations unfolded in plant life; and when that is matured he can equally, yes, even better, enjoy and relish green vegetables, &c., with those who see less of these revelations of Nature.

The hot days of August are welcome to the gardener, for in them he sees the maturation of some choice crops which cooler, and more unfavorable weather would deprive him of. Melons, tomatoes and all other vegetables of tropical origin require the heat of July and August in order that they may mature with a rich, delicious flavor.

We are adding, from time to time, to our vegetables and plants, those of tropical origin; and as we advance in knowledge and culture many others, without doubt, will be added to our already respectable list. Every acquisition is an addition to the comfort of our families and to the nation's wealth. Health and refinement are promoted by the variety of food which a family consumes—"the former generation" to the contrary notwithstanding. A good test of civilization is the variety of fruits, vegetables, &c., produced in the garden. Contrast the tropical man or the Esquimaux with the most enlightened and civilized of the temperate climate, and what a difference will be found in all respects. This is not purely the result of climate, for on the same parallel of latitude, in our own country, we find very different tables set. Some will be supplied with almost every variety of fruit and vegetable as well as meats; on others will be found the everlasting hog, salt meats, potatoes or hominy, in some of their forms, every day of the year. What wonder that the youth fed at such a table are glad to see the time when they can leave such a life and farming altogether?

During this month the labors of the judicious gardener are rewarded by a continuous supply of delicious edibles, which may be kept up as long as vegetation continues for the season. Any surplus of most kinds may be preserved in some of the various available modes of preservation. The space cleared of

early vegetables may again be occupied by some other late crops, as turnips, cabbage, spinage, &c.

Asparagus.—If not already done, give a dressing of some suitable fertilizer and carefully work it in; keep clean of weeds; gather, clean, and sow the seed in well prepared beds, if desirable, and new beds are needed.

Beans.—Save some of the earliest and best for seed, gather them as they ripen, dry in the attic where vermin will not disturb, &c. Gather for the table, &c., as they are ready. Bush varieties may be sown to furnish a winter supply of snaps, &c.

Beets.—Gather first from the thickest parts of the bed, so the rest may have space. Keep the ground clean of weeds, water and cultivate. One or two of the earliest may be marked for seed.

Blackberries.—Gather as fast as they ripen fully. Can, or dry any surplus.

Cabbage, Cauliflower, and Brocoli, should be hoed frequently to keep them growing.

Celery.—No plant delights more in moisture than this, and if the trenches are in well drained soil, it is well to water freely every other day. Stir the ground often, and do not begin to earth up too soon. Rapid growth is essential to goodness, hence applications of fertilizers in a liquid state, or worked in the soil about the roots, is often advisable.

Corn.—Mark and save for seed a few of the earliest and finest ears; gather and use others as fast as they come to suitable condition. In some sections a worm attacks the ears, eating downward from the silk to the kernels, spoiling the ear. Kill them.

Cucumbers.—If it is desirable to keep them longest in bearing, pick them close, allowing none to seed. Gather and pickle, or lay down in salt. Save a few of the earliest and finest specimens for ripening for seed.

Egg Plants.—The growth and ripening of the fruit will be accelerated by placing a board painted white on the north side of the plants. Hoe well, billing slightly.

Grapes.—Guard zealously against insect enemies, and mildew. Tie the leaders to the trellis. The side shoots from bearing branches that have been shortened in will need pinching. Pinching and summer pruning must be governed by circumstances.

Herbs.—Gather as they come into blossom; dry in the shade, or in-doors.

Melons.—Thinning to only a few specimens to a vine, acts as favorably as for fruits of any kind, in growing nicer specimens of superior quality and flavor.

Onions.—As soon as they ripen, gather for use or market; but where they are to be kept any length of time, they should be exposed to the sun till properly cured. Seed may be sown for "pips," for early use next season.

Peas.—Those done bearing should have the vines pulled and fed to the pigs, stock, or be cured and stored for winter fodder; if not mildewed they are well eaten by some stock.

Potatoes.—Harvest the early crop and replant the ground to some other crop, as above. Remove to the compost heap, or burn, all the tops.

Seeds.—See to it that all the earliest and best kinds are saved as they mature. Label each one distinctly, variety and year, before putting away in a dark, dry place, secure from all vermin, or other annoyance.

Spinach.—Sow seed at intervals for fall use; cultivate well, and keep clean.

Squash.—Look out for and remove eggs of the squash bug—*Coreus tristis*—from the leaves, and destroy all insects infesting the vines. Save early specimens for seed.

Tomatoes—Continue to trim and train, as begun; hand pick and destroy the worms—larvæ of the Sphinx *quinquemaculatus*—they are harmless, although ugly looking.

Weeds.—The careful gardener gives no quarter to weeds; saves time and expense by cutting them down as soon as they put in an appearance. If the seed of any is found, the safest course is to burn them, others will add to the compost heap and aid in the production of other more useful plants.

W. H. White.

South Windsor, Conn., 1871.

Mink Breeding. — A correspondent of the Maine *Farmer* furnishes an interesting notice of Bacon Brothers' mink breeding establishment in Charleston, Me., near East Corinth. They have eighteen full grown minks—two males and sixteen females. The inclosure, including a portion of a brook, is of cedar posts and sheet iron and wire gratings, which is constructed on a ledge of solid rock. It is found that the minks, which are caught in box traps, are easily tamed, gregarious in their habits, preferring to lie down in groups and huddle together. They are aquatic in their habits, and very expert divers and swimmers. Their food is principally meat and fish. They are sleek, fine looking animals, quite playful, and seem to enjoy domestication. The writer was shown one of the feminine gender exercising her maternal instincts in nursing her three little ones, then two weeks old. They bring forth from three to six to a litter, and breed once a year. The Messrs. Bacon having gained considerable valuable experience as regards their management, are quite sanguine of success. As prime skins are worth six dollars to eight, they hope to make it a paying business.

Making Clover Hay.—Cut it early; before the heads are turned brown. Cut it when it is dry. After it is cut, wilt it as rapidly as possible, by turning it, or throwing it up with the tedder. The leaves will not fall off in this process. Then cock and cap it, and let it remain thirty or forty hours. Open to the sun and air a little and get it in.

EXTRACTS AND REPLIES.

DRY COAL ASHES AS AN ABSORBENT.

In some of the advertisements of Earth Closets, sifted coal ashes are recommended as a substitute for loam. In the report of the committee of the Worcester North Agricultural Society on Poultry, (see abstract, Flint's Report, 1870-71, page 208,) dry coal ashes are also recommended as an absorbent and disinfectant in hen houses.

Now can you tell me how they would work as an absorbent of urine under cattle, in winter, when the stock of dry material collected in the fall has given out, as was the case with myself? Would there be any danger of their rendering the soil so hard as to be impenetrable to plant roots; or, if applied to the surface in top-dressing grass lands, would they retard the absorption of heat and moisture? If the last named danger was likely to occur, it could be used beneath the surface. In my opinion, rotten turf is a better material; but sometimes,—as was the case with me last fall, when I was at work clearing up a piece of new ground,—other work prevents the securing of such material, and a substitute is needed. F.

REMARKS.—Coal ashes probably always contains more or less wood ashes, as wood is used for kindling the coal. But there would scarcely be enough of wood ashes to leach and injure the cattle by lying upon it. In other respects it seems to us that coal ashes—not cinders—would well answer the purpose of an absorbent under cattle, and would not be injurious to the soil to which applied.

We employ the ash, annually, of what falls from about twenty tons of coal; a considerable portion of this is in the hen-house, and the remainder as a top-dressing on the driest uplands we have.

There is so much coal used now, in the country as well as city, and consequently such a quantity of its ashes at command, that, if good for agricultural purposes, it is important that all should know it. There are many instances recorded where it has proved highly beneficial.

Dana, in the Muck Manual, says that from four to eight pounds in every one hundred are valuable to the farmer. This undoubtedly refers to their *nutritive* properties; but in addition to these qualities, they exercise an important influence in a mechanical point of view. If applied to a compact soil, they tend to separate the particles, and open them to the air and sun, and have an important ameliorating effect upon its producing powers.

In the English Gardener's Magazine, some interesting experiments are given as follows: Three rows of Swedish turnips were sown on the 15th of May. The rows were sixty feet long, and three feet apart, and the plants fifteen inches from plant to plant. No. 1 was manured with well-rotted dung. No. 2 with the tops of cabbages just come into bloom. No. 3 with coal ashes. They vegetated about the same time, but the row with the cabbage tops seemed to suffer most from the drought, the season being hot and dry. The row manured with coal ashes had, all along, a more luxuriant appearance than the other two. In harvesting the crop, No. 1, weighed seventy-eight pounds; No. 2, eighty-eight pounds; No. 3 one hundred and twenty-eight pounds.

In his Scientific Agriculture, Norton says coal ashes should not be neglected. There are always cinders enough to pay for sifting, and when sifted, soap-makers are usually willing to pay a small price for them. This shows that they contain soluble matter enough to be well worth saving.. Examinations show small quantities of phosphates in anthracite ash, and about two per cent. of substances soluble in water. Such facts all show that these ashes should be preserved, and applied either as a top-dressing upon grass, or ploughed in as a part of composts. They would have much of the beneficial mechanical effect of common ashes, and are also good for sowing with portable manures.

Complaints have sometimes been made that coal ashes when placed around trees have proved injurious. This shows that they have something of a caustic character, and that when used in proper quantities they are beneficial. Valuable manures, like guano for instance, which are highly beneficial in small quantity, may in large quantity be perfectly destructive to vegetation.

THE BYFIELD CROP OF CORN.

It seems to me that Mr. Poor in his communication published in the FARMER June 24, has got things a little mixed, when he refers to a crop of corn 116 bushels to the acre having been raised on the Byfield Town Farm, in 1847 or 8. I was the Superintendent of that farm at that time, and though I should be very glad to have the credit of a crop as large as that, and have been trying for the last twenty-five years to raise a large crop, and have been considered by my neighbors as a very successful corn grower, yet I have never in my experience raised over sixty bushels to the acre,—the average being about fifty bushels. Hence I never raised or reported that amount as having been grown by me, and I think that Mr. Poor had better look over his statistics and give credit where it is due.

I agree with Mr. Poor in regard to the value of the corn crop, especially on large farms. I know that it requires a good deal of labor to grow it, but then much of the work can be done at a season of the year when it can be very well attended to. It is planted in the spring when not much else can be done; it is hoed before haying, and harvested, with me, after all other crops are gathered. To my eyes eight or nine hundred bushels of nice, bright, sound ears of corn in the bins are a rich sight. The fodder of seven or eight acres of corn is of considerable importance in a stock of cattle; being worth, I believe, in a crop of fifty or sixty bushels, as much as a ton of English hay.

SPREADING MANURE IN THE WINTER.

One word about spreading manure on the snow in the winter for a crop of corn. The old adage that one swallow does not make a summer, holds good here as well as any where else. I had occasion to view a piece of corn last year where a part of it was treated that way, and it was estimated that the crop was one-half less than where the same amount of manure was applied in the spring.

IRRIGATION OR DRAINAGE.

Still another word about underdraining light, porous soils. I would like to ask "A Fire-side Farmer" whether the better quality of his crop on that sandy land through which he conducted water

was not to be attributed to *irrigation* rather than *drainage?* J. L. Hubbard.

Peabody, Mass., June 30, 1871.

THE DIFFERENCE.

Jones keeps the roadsides clean and neat;
About his buildings too;
He sets out trees, and on the street;
And thinks it pays,—don't you?
Smith "has no time for chicken fixens,
So *very* busy every day;
Business driving like the dickens—
Don't believe in such boy's play."

Jones sells in season, at fair price,
Whate'er he has to spare;
While *Smith* holds on to his for rise,
And gets the fall—that's fair!
He goes to market very often
"To get the run of trade:"
Jones consults the weekly Farmer
And thinks a saving's made. J. W. L.

Maine, July, 1871.

AGE FOR HEIFERS TO COME IN.

In the Farmer for June 24th, W. H. W. inquires at what age heifers should come in with first calf, that they may do best. The Editor very properly replies, according to the writer's experience and observation, by saying that it depends upon the heifer and her previous keeping. In our own experience we have had them come in at about two years, and also at three years of age, and found that the younger did equally as well as the older. At the present time, we have one giving milk, after her fourth calf, which came in the spring she was two years old, or about twenty-six months old. She has given milk without a day's interruption since her third calf, and has now a fine heifer calf being raised, about four weeks old. The cow has always done well, and I think has improved this season on former ones. She has always been well kept; by which I mean has had what she needed to eat of grass and hay, without being pampered, and with a little meal or shorts,—say two quarts per day—a part of the time when giving milk during winters. She was raised on the farm, and is part Durham. I believe it is much better, as a rule, to keep a calf growing by proper feeding and have them come in at two, then wait another year. We get more profit from them, as on our soil their teeth wear out and they fail when from eight to ten years old. W. H. White.

South Windsor, Conn., June 27, 1871.

HOGS.

In a recent article in the Farmer Mr. A. W. Cheever makes a statement something like this. He can buy a pig for ten dollars, feed ten dollars worth of grain, and sell the pig for twenty-five dollars, leaving a profit of five dollars, the manure being supposed to pay the labor. As I quote from memory the language may not be quite accurate, but Mr. C.'s idea is given.

Now, Mr. Cheever is a butter maker, and probably feeds sour milk, and butter milk, as well as family waste, to his hogs. But I should like to have Mr. C., or any one else, tell me how much profit can be made in raising a hog from infancy to any stage of growth where he may be properly made into pork, when round hogs are worth only seven cents a pound, with meal, at retail, $1.75 per bag of 100 pounds, and good scraps two and three-fourths cents a pound.

Perhaps Mr. C. buys at wholesale and gets feed cheaper. I do not ask the question in a critical spirit, but simply for information. A farmer told me that it used to be considered that money could be made on pork with corn at $1 per bushel, and round hogs at six cents a pound; but whether this could be done without the feeding of waste, otherwise valueless, is the question. I have heard farmers reckon a hog as costing nothing, because they had raised him on corn and potatoes, milk and waste, produced by their work on their own land. But if the products of a man's time and land are worthless, then he had better change his business, and reinvest his capital. How many pounds of meal or of scraps are required, properly fed, to make a pound of pork in an average hog?

Is there any better way to feed a hog while growing, than to let him have all he will eat, and retain a sharp appetite at meal time, three times a day; in the absence of milk or waste, feeding corn meal, with a few scraps for variety, and a daily feed of clover or some other green vegetable substances, whenever it may be had? R. A. P.

Franklin, Mass., July, 1871.

JERSEY CATTLE FOR BEEF.

As you solicit the experience of stock raisers in regard to the fattening qualities of the Jersey cattle, I would state that my experience corresponds with the statement of Rev. W. A. P. Dillingham, published in the Farmer of July 1. Good Jersey cows when in milk will not take on flesh very much, if they are fed ever so well, but will convert the food into milk and still be thin in flesh. But when dry, they fatten very rapidly if generously fed. They are greedy feeders and not apt to cloy in fattening.

In an article on "Jersey Cattle," in John Morton's Encyclopedia of Agriculture, the author says, "It is a fact not generally known that Jersey cows when too old to be kept longer for milk, if dried off and fed up fatten very rapidly." And he relates an instance of an old Jersey cow that was considered of little value and offered at a low price, that being "fed up" on turnips and meal, fattened remarkably quick, made excellent beef and gave a handsome profit to the feeder. I. R. Walker.

Springfield, Vt., July 3, 1871.

CURRANT WORMS.

I have three remedies which I can conscientiously recommend to the club, if faithfully applied, viz: crush them, burn them, or "poke" them. I have tried all of them, and know they will clear the bushes. By "poke" I mean white hellebore. You can buy it at the druggists, and a little sifted on the bushes when the dew is on, kills them. This season, as everybody is more or less troubled with *carbolic, carbolate,* or carbo-something else, on the brain, I bought some carbolate of lime and sifted on my bushes. Results,—the worms like it, or at least do not object to it when mixed with currant leaves. Perhaps if fed on the carbolate clear, it might kill them, but not otherwise. T. B.

Addison County, Vt., July, 1871.

Bad use of Sugar Beets.—An English paper contains a notice of a distillery established on the estate of a Mr. Campbell of Buscot park, near Faringdon, which produced upward of 60,000 gallons of beet-root spirit the past season, with such satisfactory results that preparations were made for sowing upward of 800 acres the present year. The "spirit" from the beet is said to be superior to that from grain, and the writer adds, the certain but sure progress of beet-root cultivation is now an ascertained fact in England, both for the production of sugar and distillation, and many leading agriculturists assert that in a few years there will be many sugar factories and distilleries among the agricultural population.

NEW HAMPSHIRE AG'L COLLEGE.

A building for the accommodation of the Industrial College of New Hampshire, in connection with Dartmouth College, was dedicated at Hanover, Friday, June 23, with appropriate ceremonies, in the presence of the Governor and Council, the Legislature, and other State officials. Addresses were made by President Smith of Dartmouth College, Prof. Dimond, Gov. Weston, ex-Gov. Smith of New Hampshire, the Hon. Moses Hunt, Chairman of the State Board of Agriculture, the Hon. David Clough, a member of the Council, Senator Patterson, and others.

"A brighter day" said the Hon. David Clough, "is dawning for the farmers of New Hampshire. We want a more intelligent and enlightened yeomanry in our State." This was the spirit manifested by all who spoke—a spirit of congratulation that New Hampshire is coming to realize the great benefit to farmers of such means of education.

Senator Patterson fitly said: "The Agricultural College belongs to the State—to the farmers especially. It is to teach the intimate relations between all professions—between labor and capital. Without capital agriculture can do nothing; without labor capital cannot accumulate. A college on a barren soil will make agriculture, otherwise unprofitable, a source of income."

The building which was thus dedicated is known as "Culver Hall." It is pronounced by a correspondent of the New York *Tribune*, a model of architectural beauty. It stands about forty rods east of Reed Hall, and fronts southward, with a fine view. Nineteen miles distant, Ascutney, the most pointed of the mountains of Vermont, stands up chiselled sharp against the sky. The building has a length of one hundred feet and a breadth of sixty, and is three stories high, with a basement. It is to be lighted with gas and heated by steam. The first story contains the chemical lecture-room and laboratory; the second, the State Museum, "devoted to the exhibition of all the natural products, whether mineral, vegetable, or animal, of the States of New Hampshire and Vermont;" while in the third, the Museum of Natural History of Dartmouth College has recently been placed. There are also in the second story various rooms for the accommodation of the officers of the College.

A correspondent of the Boston *Daily Journal* makes the following statement as to how the funds for the building were obtained:—

The late Hon. David Culver of Lyme gave $15,000 to Dartmouth College to establish a Department of Agriculture, and his wife gave $10,000 for any purpose to which they might wish to apply it. When the trustees of the Agricultural College decided to establish it as a department here, the trustees of Dartmouth proposed to the Legislature of New Hampshire to appropriate $25,000 for the erection of a suitable building if the sum of $15,000 was appropriated from the State Treasury toward completing the building, which they did at the June session in 1869. Since that time Mr. John Conant of Jaffrey has given $7000 to pay for the farm which Professor Dimond had purchased on his own responsibility, and he has given $5000 to erect suitable buildings, on condition that the Legislature give a sum sufficient to complete them. As the Legislature is composed largely of farmers, they will certainly not be so blind to their own interests and the interest of the State as to refuse to appropriate the small sum that is necessary for this purpose.

TROTTING—ORLEANS COUNTY FAIR.

A few weeks since we made a note of the fact that the managers of the agricultural society of this county in New York, had excluded trotting from its grounds during its ensuing fair. The editor of the Rochester *Rural Home* made some strictures on this decision of the officers of the society, and asked, Can not the managers of our farmers' fairs devise and put into practice, a system under which the horse can be exhibited and not gambled with?

In the next number of the *Rural Home*, a writer with the signature of "Secretary," after quoting the editor's remarks, says:—

I was surprised on reading this, as it is evident that the object and intention of the Board of Managers are not understood. The changes in regard to horses, are only and solely the omission of premiums for "trials of speed"—the "mere races," above referred to, on the one hand, and offering much larger premiums to the horses exhibited, on the other. There is no change in the rules and regulations in regard to the horses exhibited; nothing to prevent any proper tests of "strength, steadiness, and good training as applied to work," nor of style, action and speed. The track will be in good order, and the judges will have all the liberty they have ever had, or probably those at any other county fair have, for all proper tests of the various useful qualities of the horses exhibited: The Board practically acknowledge that the horse is the noblest and best animal used on the farm; as they offer much larger premiums for those exhibited, than are given to any other animals, or articles, that may be shown. The list shows that they offer seven premiums, of $20 each, and ten of $10 each, making with the smaller sums offered, in all, $285 that will be given to horses, mares, and colts. As the highest premium offered for any other animal or article is $10, it must be seen that the merits of horses are fully recognized.

It is only the "mere races," so generally attended with betting, "gambling and other mischievous practices," that are omitted. Thus I believe we are putting "into practice a system in which the horse can be exhibited and not gambled with;" as we allow of all but the regular races, whether trotting or running, which always result in betting in some form, and other disreputable practices.

MANURE FOR TOBACCO.

The tobacco growers of the Connecticut Valley have for many years depended on the manure made from fattening cattle and sheep for the leading fertilizer of their tobacco plants. But this year the decline of some four dollars on a hundred pounds of dressed beef has decided many of them to look to other sources for the great amount of manure required by the tobacco crop. How those of East Whately, Mass., are securing the

needed fertilizers, is indicated by the following letter from that town published in the N. E. *Homestead*:—

Mr. E. Belden & Son have received twenty-one carloads of manure from Montpelier and Middlebury, Vt., one hundred cords at a cost of about $13.00 per cord, delivered upon their river lots; cost of freight, per carload from Montpelier is $40; from Middlebury, $36; from Whitehall, N. Y., $34, from which place Messrs. Crafts, Wood & Billings have received twelve carloads and are to have two carloads per week through the entire season. Mr. Charles R. Crafts from this place, their agent, has moved to Whitehall and is superintending its loading, shipment, &c. Wells T. Smith has received one carload from Holyoke vaults, delivered at our depot at $15 per cord. Israel Smith has received three carloads of lime and ashes from South Adams. C. G. Crafts two carloads from Vermont. One hundred and ten tons Peruvian Guano, about seventy-five tons Phosphate, ten tons fish guano, three carloads plaster, two carloads lime, some potash and various smaller lots of fertilizers to experiment upon have been sold here this spring, at a total cost of about $20,000 to $25,000. It has made very brisk times for farmers here, causing a very "wide" odor, sometimes almost too extensive for the ordinary nasal apparatus to endure! But tobacco is sovereign; his sceptre a mighty one and our people *en masse* bow submissively to his inexorable demands.

We have had a good time to set plants and many are already through with that part of the work. Everybody has been bowed, in rain or shine, to the task—so now, old rheumatism comes in for his harvest of aches and pains. Lame backs, lame sides, lame limbs, lame necks, lame heads and swelled eyes seem to be the prevailing complaints. Why, we are perfectly delirious, monomaniac, on the growth of the sovereign "weed!" and whatever the cost of funds, muscles or brains are bound to grow it.

For the New England Farmer.

FLOWER GARDENING FOR JULY.

Cultivation of Summer Flowering Bulbs, Japan Lilies, Gladiolus, Tigridias, &c.

Japan Lilies have become the belles of the *parterre*, among the bulbous tribes. They are perfectly hardy, enduring the coldest winters of New England with a slight covering of leaves or stable litter, and they flower profusely in almost any good, common soil, and their flowers are truly magnificent. Within the past few years several new species and varieties have been either imported or produced from seed by our own florists, and so great is their number, connected with other species of lilies, that some cultivators make a specialty of growing them for the market. The bulbs should not be disturbed oftener than once in three or four years, as they do not bloom so finely if their roots are molested. They require much moisture while flowering, and if the season is hot and dry, a mulching of moist leaf mould or manure will greatly increase their beauty, and the number of their flowers. Though they will grow in any soil, yet their native element is rich and loamy, mingled with sandy peat, and they will grow several inches taller and produce many more flowers if their tastes are consulted and complied with. There are several species of these flowers.

Lilium lancifolium is their botanical name, and the varieties run through various shades of crimson, from pale blush, flesh color and rose, to the deepest crimson. They grow from eighteen inches to three feet high, producing from three to twelve flowers, from four to six inches in diameter, with petals much reflexed, and dotted with crimson and brown and papillæ which glow like jewels on the light ground work of the petals.

Lilium auratum is also a native of Japan, and was brought to this country nearly ten years since, when one bulb was sold for forty dollars, but they have increased so extensively that fine flowering bulbs can now be purchased for fifty cents.

It is called the Queen of Lilies, and is the most lovely of all the lily tribe. The flowers are very large, frequently from ten to twelve inches across, and of a pure white, with a golden yellow stripe down the centre of each petal, while every petal is dotted with purplish crimson papillæ. It grows from two to four feet high, and a single stalk will often bear from eighteen to twenty of these magnificent flowers. It possesses a most delicious fragrance, fairly perfuming the evening air. It is raised from seeds, and several new varieties have been produced, one of which is of a snowy whiteness; the other has exchanged its golden band for a purplish crimson one.

These lilies are not quite as hardy as the *L. lancifolium*, but they will endure the coldest winter with a slight covering of leaves of evergreen boughs. At its first introduction into England it was considered a stove plant, and so treated, but the flowers were poor and withered. Out-door culture was tried, and the true beauty of the plant was revealed.

Lilium longiflorum is also a native of Japan. It grows from ten to fifteen inches high, and produces from two to five trumpet-shaped flowers of the most pearly whiteness and from six to eight inches long. The internal base of the tube is of a greenish white and they are very fragrant. If the flower stalk is cut and immersed in water, they will keep fresh for more than a week.

Lilium eximium is also a Japanese flower, somewhat similar to *L. longiflorum*, but its flowers are larger, and there is no greenish tint at its base. Two other species have lately been introduced from Japan, *L. takesima*, or Jama-juri and *L. lin-kin*, which belong to the same species of the above named lilies.

Lilium Brownii is supposed to be a native of Corea. Its flowers are very large and of snowy whiteness on the inside, while the exterior is striped and blotched with a deep purple hue. This flower requires a partial shade, and the soil should be quite sandy and well drained.

Lilium fulgens or *L. sanguinea* is also from Japan. It grows at least twenty inches high, and its flowers are from three to six

inches long. Growing in an umbel, they are of the brightest red and are very showy and beautiful. They are as hardy as the *Lilium auratum*.

Lilium thunbergianum is very beautiful. Its flower stalk is about a foot and a half in height and bears from one to three flowers of a deep orange red hue, with small purplish papillæ or spots. There are numerous varieties of this lily, which vary from pure canary color to nankeen, orange to fiery red, with orange, black and brownish spots.

Gladiolus.

These bulbous plants derive their name from their sword-shaped leaves. There are as many as sixty different species, which have been divided by hybridization into an immense number of varieties, comprising some thousands of named flowers. The English florists have paid great attention to the cultivation of them, and have found them a source of much profit. In nearly all the species the shape of the flower is the same, but they differ in colorings and markings. Very few of them are natives of Europe, but have been brought to us from the Cape of Good Hope, Southern Africa and Madagascar. They blossom during the wet season, teaching us that we should give them a copious supply of water when the flower stalks appear.

Until Cape Colony was ceded to England in 1795, little was known of these flowers, but the English botanists found them growing there, and soon they were the pride of English gardens. Since that they have become "florists' flowers," and under their successful manipulations have greatly increased in beauty and variety. To hybridize the seed, the flower must be covered with a piece of the sheerest muslin, to prevent the intrusion of insects, and its antlers must be cut away with a small pair of scissors, before the pollen shows itself. Another very fine flower of different species must be selected as the male parent of the hybrid, and as soon as its antlers have burst and are covered with the flowery-looking substance called pollen, they must be cut off and placed on a small saucer and carefully covered up for use. The stigmas of the seed-bearing plant which were cut off, must be closely watched, and when they appear a little swelled and have become viscid at the point, the pollen must be applied with a fine camel's hair brush. After this process the gauze must be again tied over the flower and kept there until it has faded away. Then take it off, but tie it about the stalk so as to mark it from other plants. The pollen once gathered, will retain its fertilizing properties for months, but the moisture on the stigma of the flower continues but two or three days, and must receive the pollen as soon as it appears. It is in this way that rare seedlings are produced. A hybrid is the mixture of two species; a cross is a mixture of *varieties*. This process requires patient watching and careful attention, but often the cultivator is amply repaid for all his care.

The gladiolus requires a light sandy and yet rather strong soil. A mixture of one-half light, sandy loam, one-quarter leaf mould, and one-quarter peat, suits them exactly. They are to be found in all shades of white, yellow, orange, rose, scarlet, crimson and purple, either as self-colored flowers or flamed, blotched or striped with one or more shades of these colors upon some one ground color.

The bulbs can be planted out singly or in groups of three or five. They should be planted from two to four inches deep, according to their size, and as they grow up should be staked and carefully tied up. They will not outlive our cold winters, and after the frost has cut down their leaves, must be taken up and the stems cut off an inch or two from the bulb. Put them into paper bags and keep in any warm, dry place.

These bulbs vary in price from ten cents to five dollars or more each; but the high prices are no surety of their exceeding beauty, as they are connected with new varieties, whose value consists in their comparative scarcity. Many of the low-priced varieties are quite as beautiful.

The following selection can be bought at prices varying from ten to thirty cents apiece: Aristote,—blush-pink, tinged with violet and flaked with rosy scarlet. Aglæ—salmon-pink, flaked with carmine and shaded into deep orange. Brenchleyensis — deepest scarlet. Berenice—rose color, flaked with red and feathered with deep maroon. Couranti fulgens—bright crimson, shaded to maroon. Don Juan—rose, mottled with crimson and shaded with yellow. Endymion—pink, flaked with crimson and edged with rose. Galathea—pale flesh color, flaked with crimson and tinted with buff. Imperatrice—black-white, flaked with rose, and feathered with crimson. Madame Haquin—blush, flaked with purple, and shaded with yellow. Napoleon Third—brightest of scarlet, striped with maroon and yellow. Premices de Montrouge—bright scarlet, shaded to rose. Tigridias, or Mexican Lilies—one of great beauty, and of the most brilliant colors. The flowers are most singular in shape, the petals very much reflexed. They are not able to endure our winters, and must be treated like the Gladiolus during that season.

Tuberoses need to be started early in March to bloom in August and September. They require very much the same treatment as the Gladiolus, excepting that the bulbs must be kept in a warm closet during the winter. They will lose their germ of life if at all chilled. The bulb never blooms but once, but it sends forth numerous off-sets which will bloom in two or three years. These should be grown in a bed by themselves, set in rows a foot apart, and many of them will bloom the following summer. There is no flower that ex-

cels the Tuberose in the purity of its bloom and the exquisite delicacy of its perfume.

The *Amaryllis formosissima*, or Jacobean Lily is a beautiful bulb, which grows from ten to twelve inches high and bears two flowers on its stem of most peculiar shape, and of the richest crimson color. They bloom in August and September, and should be treated like the Gladiolus.

The common white Day Lily is more lovely to us than its more brightly blooming sisters. Its snowy white flowers open every morning, freighted with the rarest fragrance and unequalled in purity and beauty.

We have mentioned only a few of the summer Flowering Bulbs, and those most commonly cultivated. The catalogues offer us a long list of rich rarities, both in colorings and perfume.

"Look at the lilies, how they grow!
'Twas thus the Savior said, that we,
E'en in the simplest flowers that blow,
God's own watchful care might see." S. O. J.

For the New England Farmer.

DRAINAGE.

In looking over my file of NEW ENGLAND FARMERS, (Monthly for 1870, page 419,) I see the letter of Mr. John L. Jones of Ripley, Me., asking for information in relation to underground drainage of land that has a tight pan subsoil. Having had some little experience in the draining of land, I beg to offer a few remarks, and if too late to be of service to the inquirer, it may assist some other brother farmer whose land wants draining.

There are lots of farming pamphleteers, some of whom know about as much of the practical part of drainage or farming as an ass does of snipe-catching,—their object being to *sell* their books. But give me the writings of a practical farmer who is not ashamed to sign his name in full at the end of the article he writes in any paper.

Judge French's Work on Drainage *may be* an excellent work; but he can't seem to quite understand stone draining. With all due deference to that gentleman's judgment, as also to that of the worthy editor, I cannot but differ in opinion with both. In the first place, Judge French must think but very poorly of farmer's common sense to imagine any one who knows peas from beans would ever think of putting in a drain only a foot deep.

From the tenor of Mr. Jones' letter, he is for economy as well as durability, and to go upon Judge French's plan, would be pretty near as expensive as having draining pipe or tile by railroad. To say the least of it, it could not be done without some considerable extra expense that would be altogether useless in a stone drain. Then to talk of filling in with shavings. Farmers have not always planing mills upon their farms,—at least not up in this Western country,—to supply such a commodity, and which would in a short time rot out and the soil sink that thickness.

Perhaps Judge French is *not* aware that if a drain is dug four or five feet deep in hard tight pan, as it is called, and the soil thrown in again without stones, poles, tiles, or anything else, that that land for several feet on either side, will drain to a great degree, though not sufficiently to insure good crops in wet seasons. But if stones are thrown into the drain and adjusted a little, with small stones scattered on the top to fill in the apertures between larger ones, and if there is only a very trifling fall, a permanent drain is secured, one that will last for years,—I may say for generations to come, and drain the land effectually from eight to ten feet on each side. These need no shavings, no hay, no nothing. The soil will naturally set in solid on the stones as well as on shavings. So far from the small stones being injurious—they would be beneficial, by helping the drainage.

Neither do I agree with our worthy editor in respect to the smaller stones being a nestling place for moles. I don't just see the point. I think that the moles would have better working stuff in the hay, shavings, or turf. Possibly the water may flow down through the mole holes for a short time into the stones below, but they would soon fill up, but not be so likely to stop the drainage as if made according to Judge French's plan of a duct or culvert.

When tiles and stones are not easily get-at-able, land can be drained with poles, which will last for many years. I have drained with six or more poles and find it to answer. I put in the bottom of the drain three poles or young oak trees, with the roots on, then lay two and then one, placing them in the drain with their end down hill, putting at the outlet some roots with pole cut off, to keep the mouth of drain open. With regard to the course the drains should run. If the land falls from north to south and east to west, it matters not if some drains are put in each way so they can empty freely. In some cases a larger receiving-drain is needed to conduct and carry off the water from the smaller drains. JOHN WHATMORE.

Bridgnorth Farm, Ill., 1871.

REMARKS.—Our correspondent evidently misapprehends the directions of Judge French. We conclude that an unfortunate sentence of ours misled him. We, not Judge French, made the remark, that,—

"A drain between three and four feet deep will be more sure to carry the water freely, and will be much more permanent, than one laid *a foot or more less*."

Instead of intending to recommend drains "only a foot deep," as friend Whatmore seems to have understood us, we wanted to

say that a drain between three and four feet would give better satisfaction than one between two and three feet deep; or as we expressed it, "a drain between three and four feet deep will be more permanent than one laid a foot or more less" in depth than three or four feet.

We have a high respect for the opinions of our correspondent on agricultural matters generally, and particularly in respect to land drainage, as he was brought up in England where this branch of farm improvement has received more attention during the last fifty years, than in any other country with the exception perhaps of a small portion of Germany, and as he is now engaged in the practical cultivation of an Illinois farm. Whether he agrees or disagrees with Judge French or others who write for the FARMER, either as correspondents or as editors, Mr. Whatmore's suggestions will be equally acceptable. None of us should forget that in all our association with our fellow men we are both teachers and learners. The good book intimates as much in the declaration that "He that is first in his own cause seemeth just; but his neighbor cometh and searcheth him." All of us need "searching," and none perhaps so much as editors.

CUTTING AND CURING HAY.

At a late meeting of the Union Farmers' Club of Lenox, Madison Co., N. Y., the subject of "Cutting and Curing Fodder" was considered.

Mr. Ralph H. Avery recommended that clover, especially the small, be cut when about half the blossoms have appeared, but not when wet, or when the dew is upon the grass. When cut and little wilted, I put it in small cocks with a fork, and there let it remain several—say two or three—days, and then turn the cocks over, and stand a day or two longer. If there has occurred a shower of rain in the time, the cocks being small, it will dry out. Clover cured in this way retains all the leaves and flavor, and will be relished by any kind of stock. When fed in winter to cows they will give nearly as much milk as when at grass, and if kept in a warm stable, as they should be, for calves, colts, sheep or horses, it is a most excellent fodder. My rule for cutting timothy is when, *and just when*, the first blossom has fallen and before any appearance of seed. Then cut after the dew is off and grass dry. Cock up when well wilted—not cured to dryness—open the same an hour or so in the sun the next day, and then draw in the barn,—the barn to be a snug one, with ventilation only through the roof, keeping barn doors always closed, except when obliged to be open while drawing in the hay. If hay has no *water* in it, except the juices in the grass, when cut, and is well wilted, and has had a chance to sweat in the cock, and is placed in a snug barn, I have no fear of its being burnt in the mow or from mould, but if cut early, and cured and stored as stated, I am always sure of having hay that my stock like; my cattle keep in fine condition, hair bright and lively. In addition, I believe a timothy meadow cut thus early, will retain a thicker sod and improve, whereas by not cutting the grass until the seed is ripe, on some land the meadow will run out, and the owner be obliged to plough and re-seed; but by following the system of mowing thus early, and an occasional top-dressing of manure, a meadow will improve and be better from year to year. Medicinal herbs, when cured so as to retain their aroma and virtue as herbs, are always gathered when in flower, and are never dried in the sun. So grasses should be cut when in flower, and cured so as to retain that fine color and flavor which every intelligent farmer likes as well as his stock does. Any farmer who follows this practice and notices the result, will never again wait for grass to ripen the seed before cutting, as is too often the practice.

General Bruce thought early cut grass the best, and in curing it the less sunshine and the most air on it, the better, and that it should be cured before going into the barn. In regard to young grass, he gave it as his opinion that cows liked it the best, and that it brought more milk.

The discussion having closed, the question of early, medium or late cutting of grass, &c., was put to a vote, when the question was decided in favor of early cutting by a large majority, a few being in favor of medium, while none were in favor of late.

At a meeting of the Guilford (Chenango Co., N. Y.,) Farmers' Club, June 10, the same subject was discussed.

Mr. Wm. Jewell stated that in the absence of his personal attention in the securing of his last hay crop he had suffered largely, and his stock still worse, and that in the future this must be attended to if much else is neglected, and asked what the amount would be in Guilford if the hay crop suffered in value three or four dollars per ton, in being cut too late or improperly secured? He says it must be cut early.

Mr. Edward Jewell said he wanted his hay to be put in early, and in a manner that it would heat and press together firmly without any water upon it, or but little sun, and then close the barn and exclude the air as much as possible. In this the chair agreed with him.

Mr. H. A. Burlison also agreed that it must be cut early, but would like all cocked one

night in the field before putting in the barn. He also urged the use of the hay tedder, and thought its use added materially to the worth of every ton of hay, as its drying was more equal and more dried by the air than by long continued rays of the sun,—no one disagreeing with him in this respect. All spoke highly of the tedder who had used it.

Messrs. More and Rood thought it a good time to cut grass late in the afternoon, that it might be secured earlier the next day, as there would then be no dew on the grass or under on the ground, and if it rained the next day it would not be hayed to hurt it, and many times escape showers thereby.

BEE MATTERS.

The following article was written in reply to inquiries that had been addressed personally to the writer:—

Substitute for Pollen.

The best substitute for pollen that we have yet tried is rye flour. It should be ground very fine and not bolted. To feed it advantageously, take a board a foot and a half wide by three feet long, and nail to its sides thin strips about four inches in width. This will make a shallow box of three inches in depth. Now pour in the flour to the depth of an inch, and set it in some place near the apiary, out of the wind. Rye flour fed in this manner induces early breeding, and consequently early swarming. It should, however, be fed early in the season, before the bees can get supplies from natural sources.

Distance apart for Hives.

As bees are ordinarily kept, they should be set at least twenty feet apart. Especially where natural swarming is allowed, the hives should be set as far apart as they can be conveniently. When hives are crowded close together there is great danger that the young queens will be lost when returning from their "wedding flight."

Number of Queens in a Swarm.

In ordinary cases but one queen issues with a first swarm, and that is the old one. Second and third, or after swarms, often contain several queens. When unfavorable weather delays the issue of after swarms for several days they are almost sure to contain several queens. I have known as many as twelve queens issuing with a single swarm.

Weak Colonies.

There are many reasons why swarms of bees are weak and feeble, and consequently unprofitable to their owner. There are thousands of hives that contain too much *drone comb* for profit. This is especially true of box hives. Another and common cause of feeble swarms is small and unprolific queens. Where bees are kept in small numbers and in isolated situations, the queens are apt to meet with drones from the same hive, which results in "in-and-in" breeding. Colonies that are weak in spring, if they have a good queen and plenty of good worker comb, can be built up by a regular and judicious system of feeding. If they are in movable comb hives a frame of comb may be occasionally exchanged with one taken from a strong stock containing brood that is nearly mature. To all apiarians who do not find their bees a source of profit, I would urgently recommend the Italian bee. Procure a pure queen from some reliable dealer, and rear all queens from this one, paying no attention to what drones they meet. In this way you will have colonies which will be prolific in both bees and honey, provided they receive proper care and attention.

Bees Deserting their Hives.

Many bee keepers complain of bees deserting their hives. Often when bees are hived in swarming time they will stay but a short time and take "French leave" for the woods. A common cause for this is that the hives are left exposed to the direct rays of the hot sun. If the hive be new and clean and is kept cool, but few swarms need be lost in this way. Those who adopt artificial swarming have no trouble with their bees leaving, as an artificial swarm, properly made, *never leaves its hive.*

Transferring Bees.

The best time for transferring swarms from box to movable comb hives, is, in our opinion, when the apple tree is in blossom. It is also a good time three weeks after swarming, as the combs contain but very little brood at that time. Select the middle of a fine clear day in which to perform the operations, and, removing the hive to be transferred, setting an empty hive or box in its place, for the returning bees to cluster in, blow a little smoke in at the entrance of the hive, and turn it over, bottom side upwards. Now place a box without any bottom on the hive and if there be any crevices where bees can escape, tie a cotton sheet around them where they come together.

Now with a couple of light sticks rap on the hive, and the bees will begin to ascend into the box. When the bees have nearly all ascended, which will be in about twenty minutes from the time the drumming was commenced, untie the sheet and remove the box, setting it on a board so that the bees cannot get out. Now take the old hive to some convenient place—a clean barn or shop floor being as good as any. With a chisel and hammer pry off one side, and with a long, thin-bladed knife cut out the combs one by one. Have a smooth board a little larger than your combs, and lay a couple of thicknesses of flannel cloth upon it; then as you cut out each comb, brush off the adhering bees and lay it upon the cloth. Now place your frame upon the comb and mark the size of the inside of the frame. Cut the combs a trifle larger, so

that it will fit snugly within the frame. To hold the combs in place, we use a mixture of melted resin and beef tallow, applied to the edges of the combs.

All combs containing brood should be placed together in the centre of the hive. Reject all drone comb. When all the frames are full, carry the hive and place it upon the old stand, being careful not to dislodge any of the combs. Now bring the box containing the bees and shake them down in front of the hive, and if the entrance be large, as it should be, they will readily enter. In transferring, care must be used not to expose any honey where the bees will find it, or robbing will generally be the consequence, unless the flowers are yielding an abundance of honey.

Prevention of Swarming.

We have not as yet found any method whereby swarming may be *absolutely* prevented, if the bees are kept strong in numbers. Remove the old queen, and give the colony a young one of the present year's raising; and if the bees have plenty of surplus room, easily accessible, but few swarms will issue. If artificial swarms are to be made, it should be done early—as soon as the bees are strong in numbers, or just before they would issue naturally.—*Herbert A. Burch, in Rural New Yorker.*

For the New England Farmer.

HARVESTING HAY.

Haying is again upon us, and with no more than half a crop to secure, it becomes of the first importance that we make what we have of the greatest possible value. How shall this be done? is the important question. Much has been said and written of late about curing hay in the mow; much experience has been given and many results, which at first appear contradictory, have been reported by men of the highest standing both as gentlemen and as farmers.

Your readers have noticed some extracts by "Z. A. G.," in the issue of June 24, from Col. Stewart, of Farmington, as reported by the Secretary of the Maine Board of Agriculture. Now, if one is to copy Col. Stewart's plan and expect like results, he must observe to the letter all his conditions. First, no grass cut till the dew is *entirely* off; secondly, all the hay or grass to be in the mow before the dew begins to fall; to be thoroughly wilted and got in when warm; thirdly, the hay to be packed away snug and covered with a sweat blanket of old hay or straw thick enough to absorb all the moisture arising from the green hay.

Now, gentlemen, follow Col. Stewart's instructions as closely as you can,—take your grass as you find it upon your farms and put it into your barns in the first half of July, and I will warrant that two out of every three of you will just about spoil your hay. How shall this be avoided? Please lay down this paper and take up the issue of June 24, and read carefully the second article upon the first page (from Gov. BROWN, I suppose,) read it two or three times, so as to take in the details, then cut and cure your hay in strict accordance with those instructions, and I will warrant each of you to save your hay in perfect condition.

I do not believe in drying hay too much, or in letting it lie in the swath or windrow over night; but from the observation of a life time, and the experience of twenty-five years, I am satisfied that ten tons of hay are every year put into the barns of Maine dried too little, for every one dried too much.

Remember, that with whatever system you adopt, success depends upon care and faithfulness combined with good judgment.

D. H. THING.

Mt. Vernon, Me., July 3, 1871.

For the New England Farmer.

CROPS IN MERRIMAC COUNTY, N. H.

I have just been taking a drive through some of our adjoining towns, and I send you my observations relative to the crop prospects.

I never saw grass looking so poorly. Many fields would not begin to pay for mowing in an ordinary season. The rains for a week or two past have helped many fields, but if we had had all the rain we asked for, the hay crop would have been far below an average. I noticed a few farmers have taken the advice, so often given by the NEW ENGLAND FARMER, to sow fodder corn to meet the emergency next fall and winter; but it is surprising to see how few appreciate a good field of fodder corn, or take any measures to guard against the scarcity of fodder next winter.

Corn is looking poorly, as a general thing, from the fact that it did not come up well, on account of the drought. Wheat and oats are looking finely. The Early Rose potatoes are in full bloom and look well. Oronos are too long coming up, the drought has had more effect upon them, and many hills are missing. A larger area has been planted than usual.

Fruit, there is none of any kind; even the small wild berries are among the missing. The black and striped bugs have made fearful work among the vines, and the cut worms mow everything before them in the shape of garden truck.

Wool is all picked up. A few farmers who do not take the NEW ENGLAND FARMER sold for forty-five cents, but the most of it was bought at fifty cents per pound. On account of the low price of wool last year, many farmers sold off their best sheep to the butchers, and kept the scallawags. Now they see where they missed, and are willing to own it; but how many will profit by it?

Agricultural Fairs.

The Directors of the Merrimac County Agricultural Society held a meeting at Concord, June 26, and voted to hold their Fair on their Park in Concord, Sept., 21, 22, 23. A liberal premium list has been prepared, and it is hoped a spirit of emulation will be awakened by the farmers in the county to obtain them. We want the farmers to visit the fairs, become members, take their families, and consider it their holiday. But this is not all, we want every farmer that goes, to take along that nice trace of seed corn, or some of that nice wheat, or oats, or those big potatoes, and beets and turnips, or drive down those nice oxen or that cow which you brag so much about; exhibit the butter and cheese your wife or sister has made; let the wives and daughters carry those nice rugs and quilts they have been making; in fact, carry anything you consider nice, and then we shall have a fair that will be a credit to us as farmers, in each of our respective counties, and we shall not go away grumbling and dissatisfied, and feeling that the whole thing is a humbug, and that we have got better stuff at home. And then if you fail to get a premium, ascertain how your competitor managed his crop or article to get a better one than yours, and make a resolve to beat him next year if possible. In this way our fairs will become interesting, profitable and instructive.

S. C. Pattee.

Warner, N. H., July, 1871.

For the New England Farmer.

DRAINAGE OF DRY SOIL.

The remarks of "A Fireside Farmer" on "Drainage of Light Soils," in the Farmer of June 24th, has brought to mind a few facts that may interest some of your readers.

Although not a fireside farmer, an ex-governor, nor a general, yet my practice as an out-door farmer will prove just as much as though all the above titles were attached to my name. Therefore let me say, to begin with, that I am a believer in both thorough draining where there is anything to drain, and irrigation where it is needed and can be applied.

Sixteen years ago, when I came upon the farm, there was in one part of it, a fine field of about three acres, with a place near the centre of about one-eighth of an acre, where the water stood nearly through the year, among bogs of bulrushes and other wild grasses, and inhabited by frogs and their usual attendants.

This place had formerly been drained, in part, by digging through the east bank about four rods. This drain was found to be closed. It was taken up and lowered, so that the drain is now about six rods long and from one to four feet below the surface. The bogs were taken out and the surface of this unsightly spot was smoothed, and ever since it has yielded a good crop of grass.

No one passing over this drain when covered with grass or with any other crop can tell where the drain is by the appearance of the crop, but below the outlet for some rods there is a great improvement.

Another case. A portion of a field of seven acres, laying on a rise of ground descended a little to the east and more to the north, was so wet that the grass would winter kill. Through this we put three drains, about thirty rods long each, with side branches as was thought necessary. The outlets to these drains are under a stone wall upon the upper side of another field that has been mowed for eighteen years, and only top-dressed three times, and for a number of rods below these outlets the grass is thick and rank enough; this field being what may be called good corn land. The field above, that was drained, has been planted and sowed to a great variety of crops, which have all proved perfectly satisfactory.

Now for "A Fireside Farmer's" theory and the ex-governor's practice. If his drains were shallow where they pass through the light soil, would not the water passing through them have the same effect upon vegetation at the surface above those drains as it would have had if the water had been discharged upon the surface?

To prove the universal drainage theory to my mind, Ex-Gov. Smyth should put in a drain by the side of his others through the dry portion of his field without extending it into the wet portion; then take another strip of dry land and work it up, say two feet deep, and treat the surface of each of these as he did those drains above referred to. In this way it will be shown whether the extra growth of grass is the effect of the drain alone, or the moisture from the water passing through the drains under the surface, or the working over the soil, or all together. C. E. K.

Dudley, Mass., July, 1871.

Transplanting Plants.—I recently saw an item recommending transplanting plants at night, to prevent wilting. Wilting, and other injuries from the hot sun, are entirely overcome by my method, which is as follows:—Dig a small hole in the ground, turn in some water and then some rich soil, stirring until a moderately stiff batter or mortar is formed—stiff enough for it to adhere when the plants are placed in it. Now take, say a dozen plants at a time, and immerse the roots in the mixture, when, if properly done, the roots will be covered with mortar. Set the plants where they are to grow; use no water—no matter how hot the sun is—for wilting will hardly be perceptible, and none will die. Where a great many plants are to be set, the mixture may be placed in a vessel, to have it portable, as the plants should be put in the ground as fast as taken from the mortar.

The object in using rich earth is two-fold; it both retains moisture and acts as a fertilizer. All kinds of plants may be set in this way.—*Western Rural.*

JULY.

BY JOHN CLARE.

Loud is the Summer's busy song,
The smallest breeze can find a tongue,
While insects of each tiny size
Grow teasing with their melodies,
Till noon burns with its blistering breath
Around, and day lies still as death.

The busy noise of man and brute
Is on a sudden lost and mute;
Even the brook that leaps along,
Seems weary of its bubbling song,
And, so soft its waters creep,
Tired silence sinks in sounder sleep;

The cricket on its bank is dumb;
The very flies forget to hum;
And, save the wagon rocking round,
The landscape sleeps without a sound.
The breeze is stopped, the lazy bough
Hath not a leaf that danceth now;

The taller grass upon the hill,
And spider's threads, are standing still;
The feathers, dropped from moorhen's wing
Which to the water's surface cling,
Are steadfast, and as heavy seem
As stones beneath them in the stream;

Hawkweed and groundsel's fanny downs
Unruffled keep their seedy crowns;
And in the over-heated air
Not one light thing is floating there,
Save that to the earnest eye
The restless heat seems twittering by.

Noon swoons beneath the heat it made,
And flowers e'en within the shade;
Until the sun slopes in the West,
Like weary traveler, glad to rest
On pillowed clouds of many hues.
Then Nature's voice its joy renews,

And checkered field and grassy plain
Hum with their Summer songs again,
A requiem to the day's decline,
Whose setting sunbeams coolly shine
As welcome to day's feeble powers
As falling dews to thirsty flowers.

BREAKING HEIFERS TO MILKING.

Frye, Jr., writes as follows to the Lewiston, Me., *Journal*:—

All domestic animals require some sort of training or education. The steer may require more training than the heifer, because the uses are varied to which he has to become accustomed to make his labor "skilled" and practicable. While the cow may not need to be schooled in these higher branches of *practical studies*, she should be taught that to stand quietly while being milked, and to "hoist" the right foot and place it back of the other, are virtues to be commended and rewarded by kindness, at least. No animal should ever be allowed to pass their first winter without being thoroughly "halter broke," so they can be led by the horn, or with a rope around the neck, gently and peaceably. Doing this when they are young and easily handled, it saves a vast amount of subsequent hard work and perplexity, and, may be, the animals many kicks and blows. There is a great difference in teachers in this kind of science as well as in the four-footed pupils. Some teachers I have seen did not evince half the sense as the cattle they undertook to train. On the other hand, there are some animals so perverse or *non compos mentis*, that it seems almost impossible to teach them the first rudiments of good manners. But, certainly, in most cases there is nothing gained by letting them grow up in these uncouth ways, thinking to take them in hand at a later day. *Train while young* should be the motto of the barnyard.

Many an otherwise excellent milker is spoiled for life by harsh treatment. It is better to govern by gentleness and kind treatment than by harsh means and fear of the master. A heifer if well broken to the milk-pail, is thereby made worth at least twenty-five per cent. more,—an increase which will pay for much painstaking. The handling of the udder and the process of milking is a very unusual proceeding, and in addition, the teats are often tender, and the bag caked and inflamed so as to be painful under even the gentlest touch. How often when in such a condition from pain and apprehended danger, she almost unconsciously lifts her foot and knocks over the milk-pail, and perhaps hits a well-deserved "thwack" upon the shins of the bungler upon the milking stool, and then kicks and bruises are freely interchanged between the frightened brute and the irritated master.

First teach *all* your animals to love rather than fear you. Learn them to welcome your coming, by presents of a nubbin of corn, an apple, a little salt, &c., on all occasions when practicable. Handle them freely, and get them accustomed to your touch, by rubbing and scratching them. Heifers thus accustomed to being handled, will soon come to seemingly like the operation of milking. I once had a heifer that from having exceedingly sore teats, contracted the habit of running away from me, when milked in the yard, before the milk was half drawn. All my endeavors to break up the habit failed till, as a last resort, when she started away from me, I caught up the pail with one hand and seized one hind leg with the other, and held on firmly. After hopping a few steps, and some pretty severe kicks and jerks to free herself were made, all to no purpose, she "accepted the situation," and calmly submitted to the process till milked clean. Two or three such lessons cured her entirely. Such usage would probably have frightened her and made the habit worse had she been unaccustomed to being petted and handled. But a few lessons gave her an understanding of what was required, and subsequently any attempt of a repetition of the misdemeanor would be suddenly checked by merely placing my hand gently upon her leg.

It is very important that cows of any age be milked clean; but more especially should this be practiced with heifers. One of the secrets of butter-making lie just here. I need not tell those that are used to the care of cows and dairying that the last drawn gill is nearly all cream, and when one of these little measures of milk is left in the udders of several cows, as a careless milker will often do, no insignificant quantity of the richest milk is lost every day.

But this is not all or perhaps the greatest loss. Leaving milk in the cow's bag has a most deleterious effect upon the cow. Undoubtedly many cases of garget might be traced to this neglect. And the habit, if persisted in any length of time, will cause a gradual falling off in the milk, and the cow will be very unlikely to regain her full milking powers again. This matter is worth more than a casual thought. Heifers, the first year of their coming into the dairy, should be entrusted to no inexperienced or careless milkers. A good milker will draw the milk in silence and quickly. Never allow yourself to leave a cow half milked, and then return and finish, thinking to get the full complement that the cow would give. This habit is nearly as bad as the one spoken of above, and its practice brings about the same results. By such means heifers often contract the habit of withholding their milk; a most perplexing habit and often not easily cured. A good milker will attend to his work and draw the milk clean as quickly as possible and establish the habit of giving down freely—a valuable item in a young cow.

HOW TO GET PLENTY OF FRESH EGGS.

In a long communication to the Germantown *Telegraph*, upon the subject of poultry, Mr. E. Dwight, of Hudson, Michigan, considers the question, "How to get plenty of good flavored fresh eggs with little trouble," and thinks if there is any secret in it he has discovered it, and makes the same public for the benefit of all interested. He says:—

"Once, thirty years ago, I was troubled just as my neighbor now is. I fed my hens plenty of corn and got but few eggs. I reasoned upon the matter, and happened to think that the constituent parts of milk and the white of eggs were much alike. Now, it has long been known to milkmen that wheat middlings and bran are about the best of any feed to make a cow give milk; why not then the best to make the hens lay eggs? I tried it, and since then have had no trouble. My mode of preparing the feed is to mix about five parts of bran with one of middlings. In the morning I wet up with water about four quarts of the mixture in a large tin pan, taking pains to have it rather dry, though all damp. This I set in a warm, sunny spot, south of their shed, and they walk up, take a few dips, don't seem to fancy it like corn, and start off on a short hunt for something better, but always coming round in a short time for a few more from the dish of bran. There is little time during the whole day but what one or more are standing by the pan, and helping themselves.

I am careful to mix for them just as much as they will consume during the day. At night, just before they repair to the roost, I usually throw them about a pint of shelled corn, well scattered, so that each one can get a few kernels. If your hens don't incline to eat this feed at first, sprinkle a little Indian meal on to it. I would like all who complain of not getting eggs, to try my plan, and I think they will never be sorry.

LINSEED TEA FOR SICK HORSES.

Linseed tea is not only valuable as a restorative for sick horses, but is exceedingly useful in cases of inflammation of the membranes peculiar to the organs of respiration and digestion; it shields and lubricates the same; tranquilizes the irritable parts, and favors healthy action. We have prescribed linseed tea in large quantities, for horses laboring under the prevailing influenza; they seemed to derive much benefit from it, and generally drank it with avidity. Aside from the benefit we derive from the action of mucilage and oil which the seed contains, its nutritive elements are of some account, especially when given to animals laboring under soreness in the organs of deglutition, which incapacitates from swallowing more solid food. In the event of an animal becoming prostrated by inability to masticate or swallow more food, linseed tea may be resorted to, and in case of irritable cough, the addition of a little honey makes it more useful. In the latter form it may be given to animals laboring under acute or chronic disease of the urinary apparatus, more especially of the kidneys. To prepare linseed tea, put a couple of handfuls of the seed into a bucket, and pour a gallon and a half of boiling water upon it. Cover it up a short time, then add a couple of quarts of cold water, when it will be fit for use.—*American Veterinary Surgeon.*

—Hatfield, Mass., farmers are trying a novel mode of fertilizing their crops. L. G. Curtis tried sowing Indian meal on his tobacco land last year, side by side with guano, and was so well pleased with the results that this year he sowed ten tons on his tobacco land, and J. S. Graves is trying cotton seed meal for the same purpose. Fitch Brothers are making an experiment with barley meal. Wheat bran is said by the "scientifics" to contain most of the elements of the wheat which are found in phosphates. If barley meal proves to be a good fertilizer, buying the grains from breweries, which are sold for eight or ten cents per bushel, would certainly be a cheap mode of enriching the soil.

CLASSIFICATION OF SOILS.

WHEN farmers are conversing with each other with regard to *soils*, or discussing questions relating to them in their clubs, there seems to be no well understood, common standard among them, whereby each may comprehend at once, the kind of soil spoken of.

Six divisions have been adopted by those who have investigated the matter. These are rocky soil, stony soil, gravelly soil, sandy soil, loam and clay soil. When lands are so rocky as to be unfit for cultivation, they scarcely come under the term of soil, although they often produce heavy crops of wood and timber. But they sometimes materially benefit the crops in their neighborhood by the influence produced from their shade, moisture, and protection from winds. Their gradual decomposition furnishes a certain portion of lime, potash and other fertilizing materials, which are washed down, and greatly contribute to the support of vegetation which is within their reach. The mosses which rest upon these rocks and cling to their sides, may appear to the beholder as worthless vegetable life.—But it is not so. They are living, active organisms, penetrating every fissure of the rock, and imperceptibly corroding the solid structures and preparing them for future usefulness in soils, or composing soils themselves.

There are some other soils, peculiar in themselves, such as what are denominated peat or vegetable soils, or the prairie soils, which have been annually burned over for ages, and are highly charged with ashes and alkaline salts.

Some simple distinctions ought to be assumed for reference, and in order to gain these Professor Johnston has presented a classification of soils which is based principally upon these chemical constituents. These are

1. Pure *clay*, consisting of about sixty parts of silica, that is, flint, and forty parts of alumina,—which is a common ingredient of clay—and oxide of iron. When this earth is passed through water, no silicious sand will settle at the bottom, and it rarely forms any extent of soil.

2. Strongest clay, tile clay, sticky clay, consists of pure clay mixed with five to fifteen parts of a silicious sand—that is, flinty sand.

3 *Clay loam* differs from a clay soil, in allowing from fifteen to thirty parts of fine sand to be separated from it by washing. By this larger admixture of sand, the clayey parts are mechanically separated, and the soil becomes of a more free and friable nature.

4. A *loamy* soil, upon washing, will leave from thirty to sixty parts of sand on the bottom of the vessel in which it is washed.

5. A *sandy* loam will leave from sixty to ninety parts of sand.

6. A *sandy* soil, or light sand, as it is called, would have less than ten parts of clay. Such a soil, if worthy of the name, would scarcely produce any compensating crop.

This classification may easily be made by means of simple washing. The soil should first be dried, and then after boiling in water should be thoroughly stirred in some convenient vessel. The sand will settle first, and when it is at the bottom the liquid alone, holding the fine clay, &c., in suspension, may be poured off; when this has been done a few times, nothing will remain at the bottom of the vessel, besides nearly pure sand; this may be dried and weighed, and the quantity will indicate to which class of the above the soil belongs.

But the above classification has referred only to the clay and sand, while lime is an important constituent of soils, and of which they are seldom entirely destitute.

7. *Marly* soils, in which the proportion of lime is more than five parts, but does not exceed twenty parts of the whole weight of dry soil. The marl is a sandy, loamy or clay marl, according as the proportion of clay it contains would place it under the one or other denomination.

8. *Calcareous*, or limy or chalky soils, in which the lime exceeding twenty parts in one hundred, becomes the distinguishing constituent. There are also, calcareous clays, or loams, or sands, according to the proportions of clay and sand which are present in them.

Then *vegetable* matter is sometimes the

characteristic of a soil, which gives rise to a further division of

9. Vegetable moulds, which are of various kinds, from the garden mould, which contains from five to ten per cent., to the peaty soil, in which the organic matter may amount to sixty or seventy. These soils are also clayey, loamy or sandy, according to the predominant character of the earthy admixtures.

The *management* of these soils would require quite a diversity of practice, some account of which may be referred to in another article.

THE HAY CROP.

The grass crop of New England, is its staple crop. It not only sustains our domestic animals but, indirectly, sustains man himself. Of the grain crop, we import largely, but we have a surplus of hay, which has always found a demand, both abroad and at home. Thousands of tons have been formerly sent into the Southern States, where the soil, under proper culture, would produce two or three tons to the acre. And yet, Southern planters have had very little land devoted to this important crop. More recently, however, they have discovered that most grasses flourish on their soils, especially those which are dressed with marl, vast pits of which exist in various localities, or where some of the phosphoric fertilizers are used. An incident occurred, however, several years ago, in North Carolina, which attracted the attention of planters, and probably had a wide influence in introducing a more general culture of the grasses.

An observing gentleman had been invited to deliver an address before an agricultural association which was to hold its meeting in the city of Raleigh. With his written address in his pocket, he arrived at the city quite early in the morning, and on going to his hotel noticed several drays heavily loaded with bales of hay on their way from vessel to warehouse. On passing through the market-place, after breakfast, he found plenty of New England hay on the stand for sale. Upon inquiry, he learned that large quantities of northern hay were annually brought to that market, and there found a ready sale at an average price of about $30 per ton!

Ashamed of a practice so common among the planters, of not producing their own hay, and which he had, perhaps, been influential in perpetuating, he thrust his written address into the bottom of his valise, and devoted the remainder of the time to writing a new one, for the following day. In this he clearly unfolded the favorable conditions of their own soil and climate for producing the grasses for hay crops, and the facilities for enriching the soil. He then presented the statistics of importation, and the annual cost to the Southern States for hay exported principally from New England, and closed with a scathing rebuke for the neglect of the valuable opportunities which they might enjoy. From that period, and especially, quite recently, an increased breadth of land has been devoted to grass crops in the Southern States. Still, however, we are informed, that pressed hay is quite an important article of export from our seaports, and that some portion of it finds its way to our neighbors in those States. While we are thankful for an open market for the surplus products of our farms, we still think the policy of our Southern friends in neglecting the cultivation of the grasses about as wise as that suggested by some of our own people to neglect the culture of the Indian corn crop here. Where soils are suitable, let each section cultivate both.

The season of our hay harvest is near at hand, and notwithstanding the untold amount of experience which has been gained in the matter, a considerable diversity of opinion still exists as to the best modes of curing and preserving it. As its value depends very much upon *the time* when it is cut, it is worth while to give special attention to this point. The true answer to a single question, would be all that is necessary to settle it.

The great effort of nature is in animals and plants, to continue their kind. All sacrifices, and difficulties of every sort, will be encountered, and overcome, if possible, to accomplish this end. So it is with plants. Cut them down in the midst of their vigor; trample them in the dust; deprive them of moisture, or shut them out from the sun's rays, and they will still struggle to throw out a single branch in order to perfect a single seed, if that is all they can do. This is the effort which the grasses are constantly making; for which they attain height, in order to come to light and air; throw out blossoms and pollen to fructify each other. Then the seed is formed,

at the time when the plant has gained its most vigorous growth, and is nearest perfection. The stem and leaves are tender, juicy and rich in nutriment. Now, then, is the true time to cut it—just as soon as the seed is formed. After this, all the energies of the plant are devoted to the perfection of the seed; that must be taken care of. To accomplish this a great change takes place. All the nutriment which the seed needs is sent there, and most of the sugar and starch—the important qualities which we wish to retain—are changed into woody fibre, in order to strengthen the stem, to hold up the seed to the air and light, until the seed is perfected. This is illustrated in the stem of the cabbage, which grows hard as the plant grows older, and the radish is so tough and solid if left to blossom, that it becomes entirely unfit to eat.

We are told upon good authority, that one hundred pounds of timothy hay contains between two and five pounds of a peculiar oil. This, we suppose, is what gives that delicious fragrance to well-cured, early cut hay. In the blades and stems there is much sugar and starch, and a peculiar gum. In grass cut when just going out of blossom, we save all these valuable properties; the very properties that give a rich flow of milk, lay fat upon the ox, or ensure rapid growth to young stock. As the grass ripens, these qualities are gradually changed into woody or cellular fibre, and the sugar and starch its various parts contain are correspondingly diminished.

It is well ascertained, also, that the weight of hay is less when allowed to ripen, so that we get a larger quantity, as well as a better quality of hay, by early cutting, and the land will not be so much exhausted.

It is urged by some that no loss is made by leaving the hay to be cut after the seed has ripened; that which we lose on the quality of the hay, we gain in the seed as a nutritious grain. But from the manner in which grass is cut and cured, much of the seed would be shattered out and lost, so far as feed for stock is concerned. What becomes of the sugar, oil, starch and gum, contained in the grass, if not all appropriated in strengthening the stem and perfecting the seed, we cannot tell. We know, however, that similar changes are constantly taking place throughout the vegetable kingdom.

A single experiment will be likely to satisfy any farmer in regard to this matter. On one acre containing the same quality of grass, cut and cure one half of it, part as the blossom is going out, and cut and cure the other half when the seed has ripened, and notice carefully how the stock receive each. But it should be fed out when all other circumstances are equal, as regards other feed, temperature, &c.

There are two or three other points of much importance in regard to curing and preserving the grass crop, to which we will refer hereafter.

PESTS OF THE FARM.

Owing to the introduction of foul seeds into the various grass seeds sown, hundreds of acres in each of the New England States are covered with plants which greatly exhaust the soil, and yet are good for nothing as summer forage or winter fodder.

These foul plants have now become a matter of serious loss on the farm. In many cases, a piece of land is laid to grass, and yields two or three profitable crops. Some one, or perhaps half a dozen hardy plants appear, and grow with such rapidity that the grass plants yield to them so that the crop wanted is greatly diminished. In the fourth year the grass crop is reduced to less than one ton to the acre, and if the land is not then broken up, the field presents more of the appearance of one of rank weeds than one of edible grasses.

In consequence of the encroachment of these foul plants, ploughing, cultivating and reseeding must be resorted to at a serious inconvenience of cost, in addition to a previous loss of crop for several years in succession. But for the weeds, the field might have remained, if on a moist soil, for eight or ten years, and given an annual paying crop, by the aid of an occasional top dressing.

One of the worst of these pests is sorrel. It is a native of Europe, but has become completely nationalized here. Like some minute insects, as the bark louse, for instance, or the wheat midge, or the little ant that undermines large buildings and brings them to the ground, its power lies in its minuteness and hardiness. Its roots permeate the soil in every direction, while the stems and leaves cover the surface,

and drive out nearly every other plant. We know of no means of eradicating it short of thorough and persistent cultivation.

Another of these pests is the white weed of our fields, or ox-eye daisy. Darlington, in his work on Weeds and Useful plants, says, "this vile intruder is becoming a great nuisance in our country. In some districts the careless, slovenly farmers, have permitted it to get almost exclusive possession of their fields, rendering them quite white when the plant is in bloom."

So far as our experience goes, we have found this an utterly worthless plant. Cattle will not eat it, nor horses or swine. It is a tough, bitter weed, and detestable on the farm. It is not only the careless farmer who suffers, but those who cultivate with great care, as well; who think they are sowing pure seed, but find too late, that it was a mixture of abominations. Or, he may sow pure seed, and foul ones may come over from his neighbor's fields and corrupt all his crops. This, too, is a native of Europe. It has one merit. It is large enough to get hold of. It starts in the spring before the grass does, and on a good soil keeps ahead of it. It grows in bunches when it gets a strong hold of the soil, and is two or three years old. It flowers all along from June to August.

Our object in referring to these pests at the present time, is to call the attention of the farmer to them at a season when he has power over the larger ones, such as the white weed, the succory, and five or six kinds of dock weeds, and can commence a war of extermination upon them in his grass lands.

They will be in a rank condition early in June, and about putting forth their first blossoms. They can be plainly seen, so that a person with a sharp hoe can cut up an immense number of them in the course of a day. Striking at their roots at this period of their growth, greatly retards them, so that they will scarcely blossom again until the grass is cut. They are then checked again, but if the season is favorable they will start up and attempt to blossom in the latter part of August, when they should be cut up again.

By some labor bestowed in this way a grass crop may be saved for several years, and thus repay in a four-fold degree for all the cost of checking or destroying them.

For the New England Farmer.

USES OF THE FORESTS.

BY EMORY A. ELLSWORTH.

As our love for the study of the botanical kingdom leads us during the summer months to travel through different portions of New England in pursuit of such representatives of its different orders and genera as can be found within the limits of these States, we like rise notice, and with nearly as much interest, the prevailing modes of operation among the farmers of these different sections.

Among the existing practices so dangerous to the future progress of agriculture, there is none with which we are acquainted which casts upon the path of our agricultural prosperity a more gloomy shadow, and fills the heart of the observing man with deeper feelings of anxiety for our future welfare as an agricultural people, than the thoughtless and wasteful manner in which our hills have been denuded of their forests. The old woods are everywhere being swept away and nothing is being done to check or provide for this removal. How many farmers, in this and adjoining States, own acres of land which would be far more profitable to them and useful to the community if restored to the forest, than in its present condition. The raising of forest trees, as a crop, is far more remunerative than the cultivation of many of the crops which are raised on the poorer qualities of land. Many a farmer will smile at the idea of cultivating forest trees; but the period has arrived in their history, when art must come to their aid. If he would see the now naked and barren fields clothed once, more in verdure, profitable in itself and serviceable in protecting other things, he must plant and cultivate them as deliberately as he would any other crop.

Now, as the preservation and improvement of the still remaining primeval forests, and the planting and cultivation of new ones, is in the highest degree important to all, and, since an extended and abiding improvement is above private effort, every citizen should do all which comes within his power to bring about this much desired end; and since no observing person can fail to notice the many benefits and uses of the forest to mankind, perhaps the interest and co-operation required to effect this change can be no sooner awakened than by bringing once more to the minds of the people the benefits which have departed as the woods have been swept away.

Among the benefits of the forest to the farmer more than to others, may be mentioned that of creating and gradually improving the soil. Year by year, as the roots penetrate deeper and spread wider beneath the surface of the earth, the air is allowed to penetrate to produce its decomposing effects. The rootlets slowly break up the coarser parts of the soil and extract from them their essential

food, and the leaves, by means of the action of heat and light upon them, transform, in their mysterious way, these substances into the materials of which the plant is composed. And as these leaves annually fall to the earth and finally decay, plant food is prepared to be again taken into the tree. The soil which is thus formed is kept from being carried away by rains by the matting and interlacing of the roots. There is scarcely a person, who can fail to notice, as their attention is directed to it, how soon an unprotected hill loses its soil; as every rain bears away a portion, until in time it becomes a barren and unsightly pile of rocks, with scarcely a sign of vegetation upon its surface.

Now, is not this precisely what is happening all over New England? Look where we may, and the bare and frowning hilltops must remind us that the fertility of former years is fast wasting away. Year by year that thin stratum of soil which hides its formation of rock is becoming thinner. Those naked ledges which are visible upon every mountain summit are becoming more exposed. Every rain which descends upon these hills, carries away a portion of our home and our support; and although a small portion of it may be deposited upon the lower land of the valleys yet the greater part of its fertilizing elements are poured into the streams, and in their liquid torrents it is borne to the vast and all-devouring ocean. Yes, is it not our homes and our support which are thus being carried off? For are not our homes upon the rugged hills of New England, and our support derived from its soil?

Not only does the presence of forests improve as well as protect the soil, but it modifies and improves, and even more materially, the climate. In the first place it renders a climate more moist. This is accomplished in the following manner:—as the clouds pass over the country, laden with moisture and charged with electricity, the forests serve as conductors between these clouds and the earth, thus leading them to discharge their contents upon the face of nature. A few large trees situated upon the top of a hill are sufficient to bring about this effect, as is shown by the fact that a charged cloud passing unbroken over a bare hill will pour down its moisture when passing over one on which a few of these natural conductors still remain.

If a few tall trees are sufficient then to produce this desired effect, many will ask, "Why are these not enough to be withheld from destruction? Why preserve the whole forest, when a grove of well selected trees will answer the demands for the same?" They will not! Let us look a little farther. Suppose this small number of trees will draw from the cloud thus charged, its electricity, and as a consequence, the moisture is precipitated. As the rain descends upon the earth, it naturally seeks the lowest level unless by some means retarded or detained, and upon this principle, it follows first the little undulations and furrows in the ground, until in time it joins still other rills, until swelling and widening as it goes, it reaches a brook. This in time runs into a larger stream, and thus all the streams are suddenly swollen and more or less damage is certain to follow. It has rained, but all the moisture is gone, and nature soon will be as dry and parched as ever. The rain has fallen, but it has nearly as quickly ran into the sea.

Now let us look at another picture. Instead of these few trees spread about upon the summit of these hills, all the hill tops are covered with forests. Now as the rain falls, instead of running off into the streams, it settles under the decaying leaves and vegetable mould, until it comes to the entangled and twisted mass of roots which support these trees. This mass acts precisely like an enormous sponge, and in its cavities the rain is retained to feed the springs, and thus to water the earth for many months. Thus instead of hurrying away, carrying destruction with it, the water is retained by the forest to moisten and refresh all nature, "when the sultry days of summer are upon the face of the earth."

From the sterility and barrenness of some parts of modern Spain, no one would ever judge that she was once numbered among the most fertile territories of the world, that those bare and naked cliffs and slopes, on whose frowning faces scarcely a living thing is seen, were once covered with lofty forests, and beneath their branches "murmuring rivulets ran joyous to the sea." Yet this is nevertheless true. She was once the pride of her inhabitants and the envy of her neighbors. But by thoughtless hands her hills were stripped of their forest protection, and with their destruction the fertility of Spain departed. And even to the letter New England is following in her footsteps. It is by no flight of imagination that I paint to you this dark and foreboding picture; but it is drawn from the bare page of fact. From the history of Spain, therefore, take warning. It is the work of several centuries to carry this deterioration past restoration, but if not checked it is sure to come sooner or later.

There are many other uses of the forest, such as the protection of the country from the violence of winds, retaining warmth in winter and excluding heat in summer, furnishing building material for ships and houses, which are of great importance but which the want of space must forbid me from more than mentioning. Yet as they are the more commonly thought of, and best understood of these numerous points alluded to, their importance is more readily seen.

And now, as we close this article on the uses of the forest, there is one more point on which, as a plea for the lovers of all that is beautiful in nature, we cannot refrain from

speaking, and that is, the utmost importance of the forest in adding beauty to the country.

A landscape destitute of trees cannot be beautiful in the highest degree, though everything besides which nature could furnish and all which art could add might be present. Are not the striking features of any landscape these old forests? Another reason why trees are so desirable as a means of beautifying the country, is that they are so completely under the control of man. The mountain, lake and river, though objects so full of beauty and sentiment, yet they must forever remain where they were created; but the trees can be moved and transplanted at will, and therefore are among the most useful of the beautiful objects of nature.

Situated near the centre of the temperate zone, we have all the most useful and beautiful of the deciduous trees, as well as the finest of the evergreens, and of all these different kinds, every one has its own peculiar shape and color, flower and leaf.

Autumn, the pleasantest season of the year to so large a majority of the people, would lose almost every charm if the woods should be removed. For beauty of coloring the autumnal woods have no equal. The vivid crimson of the sumach, the rich orange and yellow of the sugar maple, the soft olive tints of the ash, the scarlet, yellow and brown of the oaks, and the gold and scarlet of the flowering maple, are among the splendors unimagined by those who never beheld them. And now, since, together with so many other benefits, the forests are so full of beauty, and since beauty is also usefulness because it sweetens our bitterest cup with pleasure, preserve and cultivate the trees.

THE "HIRED MAN."

We have before us a half complaining letter from a young man who has engaged as "hired man" upon a large farm, in which he recounts his grievances, and wishes us to interpose in his behalf. We do not think any good would come from publishing his letter, either to him nor to our readers. If he has contracted to work eight months at a fixed rate of wages, he must do so, or break his bargain. We do not gather from anything he writes that his employer is at fault in any part of his contract. Our correspondent complains of "hard work and hard fare," which is the sum total of his letter.

Now we imagine his statement is a truthful one, and a sample of too many of the cases existing between farm hands and their employers. We spent a year of our minority at farm work in Massachusetts, every working day of which found us up long before the sun, usually at four o'clock in the morning during the summer months, the day's work ending only when it became so dark we could not see to pull a weed or drive a nail; and the visions of our cheerless sleeping room, of the fish-hash for breakfast, morning after morning, of the unvaried dinner of fried pork and potatoes, with never a delicacy, of the meanly-spread kitchen table at which the farm help hurriedly ate their meals, and the unsocial bearing of the man who employed us, who never spoke but to command or find fault—still haunts us as a nightmare. The experience of that year's labor completely fitted us to heartily sympathize with every young man who works from "sun to sun" on a farm, and is obliged to live on fish-hash. We know all about it.

But that was years ago, and was in another State; and we have been told by more than one young man who has "farmed it" in Massachusetts, that farm hands there, as a general thing, work harder, make more hours, and have poorer fare than in Maine. Even among us, things have changed a great deal for the better. Hired men upon most of our farms always eat with the family, and have the same fare. The stories current years ago of the woman who set her table with the poorest food within reach of the hired man, but who would, despite her constant efforts at pushing the plates of common food a little nearer him, reach over them, and help himself to the other, saying, "Don't trouble yourself, ma'am, my arms are long enough to reach all over your table"— are, we feel sure, rarely heard now-a-days. Still, a young man who hires out for a season, to work on a farm, expecting to find easy work and short days, will be disappointed. Farm labor *is* hard work—there is no getting round it. But instead of being monotonous, it is constantly varied, and is one of pleasure to almost every intelligent person. There must be mutual forbearance and a mutual regard for the good will of both parties, for the employer and the employe to get along pleasantly together. On the one hand the employer must not require more service than is reasonable from the hired man. Although there are times and days demanding harder work than others, yet when these do not occur the employer must "let up a little" on his help. A hired man knows what constitutes a day's work, as well as his employer; he knows when he has done enough, and we would not blame him if he did not submit to being "crowded." Time enough to partake of the daily meals should be given without feeling that the men ought to be at work; and a little time of rest after dinner, when labor is not driving, is by no means lost time, but will be cheerfully made up by longer days or harder work, when required. Farm hands demand good wholesome food, in sufficient quantity; and if an employer fails to provide it, he assuredly breaks his contract. Moreover, no farmer ever lost a cent by giving his hired men a good lunch about ten o'clock of a forenoon in haying time—the recollection of such episodes

being among some of the pleasantest occurrences of one happy summer, when a "hired man" upon a large farm.

On the other hand, the employe must willingly perform the work to which he is assigned. Do nothing by halves; be faithful in the performance of every job; have a personal care over the fields and stock, that your employer suffers no loss or injury through your negligence or inattention, and be willing to "lend a hand" in any extra emergency outside of your regular routine. Services like these will be appreciated by the man who employs you, and you will rarely find cause to complain of "hard work and hard fare."—*Maine Farmer.*

CROPS AS SUBSTITUTES FOR HAY.

In many sections another dry May seems likely to result in a light crop of hay, and a very short crop of oats, and many farmers will need some other crops to take their place. There are several which there is still time to put in, that will answer a very good purpose. The one most generally adopted is

Sown Corn.

There is still time to put in a good supply of this crop. The land can be well prepared, as for a good crop of planted corn, and laid off in shallow furrows with a shovel plough, and the corn strewn in the furrows at the rate of about forty grains to the foot. If the shovel plough has a rather wide blade, and a little more pains can be taken with the crop, fifty or sixty grains may be sown to the foot, making the row of plants somewhat wider; but this should only be done on clean land; where there are a good many weeds it is more trouble to clean out these wide rows. The furrows may be three feet apart from centre to centre, leaving a space of over two feet to be worked with a one-horse cultivator, which should be all the working that clean land will need. A large supply of

Root Crops may still be put in.

It will now be more seasonable for Swede and other turnips, but some mangolds and carrots may be put in if there is suitable rich land that can be soon fitted and sown. Carrots should now only be sown on a deep, rich, well fitted sandy loam; as, unless they thus have an extra chance, it may be too late to make the crop pay. Mangolds will do well on almost any well fitted soil, and are better adapted to the heavier clay loams than carrots or Swede turnips. Still good, deep and well pulverized soils should be selected, as the crop will now have less time to grow in, and should have as favorable chance as possible. At the same time the Swedes should have a rather light soil, as they do best on such land; so where only a rather heavy loam or clayey soil must be taken, it will be best to sow mangolds mainly, but where the land is lighter, more Swedes may be put in. There is still plenty of time to sow Swede turnips, and most farmers that have a suitable soil will sow the larger portion of land devoted to roots, to the best varieties they are acquainted with.

Millet and Hungarian Grass.

Colman's Rural World, May 27, says, in regard to millet, that

"This is a very valuable animal forage plant. Its stalks and leaves are somewhat like Indian corn, but smaller, grows to the height of three or four feet, bears a long panicle of very solid seed that makes edible cakes. The length of the panicle prevents the entire grains maturing alike, and it is best to cut it when the tips are hard and the base yet in the dough state. It loves warm, rich, and rather sandy soil, but will do on medium clay. Sow broadcast on a very thoroughly prepared soil, but will do on medium clay. Sow broadcast on a very thoroughly prepared soil, at the rate of about a peck to the acre, about the end of May or in June, and you can cut a heavy crop of excellent feed. Some years ago it was sent out at fabulous prices as Japan wheat.

"*Hungarian Grass.*—This is somewhat similar to the last; matures its crop in rather less time; requires thick sowing on fair ground at the rate of a peck or over per acre. It is an excellent forage crop, generally relished by our draft and milk animals, and makes very good returns for the cost and labor expended. If allowed to become quite ripe it sheds its seeds and fouls the land, and if the seed becomes quite ripe it is apt to remain undigested in the stomach of the horse, and cases of death are reported. We have used it and seen large crops used on the farm with great profit and without detriment."

I am aware there may, in many cases, be some difficulty in getting suitable land for these crops that is not already occupied with something else; but sown corn, Hungarian grass, Swede turnips and cabbages, may be put in some time yet, and no doubt there will be some pieces and patches of land that can be well manured and put in to some of them to good advantage. There are often some rich spots around farm buildings where a few hundred bushels of roots may be grown; these places may be weedy, but a well-tended crop of mangolds, swedes or cabbages, will do much to subdue such land. Sown corn and Hungarian grass may be put in some place where the grass or other crop is not doing anything. A few acres that are not likely to produce a crop worth gathering, may be manured, well fitted, and made to give a good crop of sown corn or Hungarian hay.—*Cor. Country Gentleman.*

—Mr. S. F. Lane of Raymond, N. H., informs the *Mirror and Farmer* that he has cut acres of bushes in some of the longest days in June, say about the middle of the month, and finds that is the best season to prevent their sprouting.

AFFECTION'S TRIBUTE.

BY B. P. SHILLABER.

'Twas busy seed-time, yet in many a field
Labor was stayed, and those whose sturdy hands
Beckoned to thrift by timely ministries
Had left their calling, and, in decent garb,
Thronged onward where the melancholy bell
Proclaimed the doings of relentless Death,
To give their sympathy to those who mourned,
And shed, themselves, a tributary tear
For one among them who had bowed his head
To the stern summons, painfully delayed.
And then, amid the blooming sweets of spring—
The trees unfolding in the bright array
That clothes the joyous season—swept along
The sombre hearse, and the long train of those
Who mourned, as relatives and friends, for him
Whose loving eyes had closed to scenes of earth
To open on the brighter ones of heaven.
They came from far and near, tender and sad,
The last kind offices on earth to pay,
And Nature seemed to hush, and hold her breath,
As on the solemn pageant swept to where
The grave was waiting, and funereal rites.
It was no hero that they honored thus—
No statesman, scholar, bard, nor one whose voice
Had thrilled the public ear by trick of words;
Nor one who'd thrust himself before the gaze
Of crowds to win fame's meed by other means.
A simple farmer—this and nothing more—
An unpretending, plain, and honest man,
With no ill brooding in his truthful heart,
And none to utter by his manly lips;
Loving the good and true, and doing good and true
In all his dealings with his fellow man.
I gazed upon the pageant, and of one
Who was of those that formed the waiting group,
I asked the meaning of the tribute shown—
Tempting the answer that I knew before:
"Why this display of grief," I said, "for him
Whose lot was cast in such a homely mould—
Why do the farmers leave their fields for this?"
He was a man uncouth—to sentiment unused—
But brushing off a tear that dimmed his eye,
He said, half sternly, "Why the fact is here;
We honor pay because we loved him so."
Ye grand and mighty, where is honor found
So glorious in its offerings as this,
That rests its giving on the simple claim
For honor's tribute that it loveth so?

CURCULIO TRAPS.

A correspondent of the *Prairie Farmer*, after having tried the plan of destroying curculios by trapping them with bits of bark, cobs, &c., comes to the conclusion that not more than one in twenty can be caught in this way. With the thermometer in the sun at 70°, he dropped a number of curculios on the ground within three feet of the trunk of a tree under which there were cobs and pieces of bark lying close around the trunks. These curculios, instead of travelling towards the tree as he expected they would, seemed to go in search of a crevice in the ground or cover under which they could secrete themselves. All, within ten minutes, took shelter under bits of earth, some of which were not larger than hazle nuts, where they appeared to be quite as contented as though they had been under pieces of bark. He next put some on the ground near the trunk of a tree; some of these crawled directly under the pieces of bark and cobs, others crawled down into an open space between the earth and tree.

At another time on repeating these experiments when the thermometer in the sun indicated 115°, a dozen curculios were put on the ground a little way out from the trees, and all soon flew away, except two; these two went under a cob where they were found several hours later. Nine others dropped at the foot of the tree near the cobs and bark; all took to wing except one; this one crawled under the bark to the tree and into the crevice between the earth and tree made by the swaying of the tree.

He mentions one fact which suggests the possibility that they may be trapped by some kind of food or bait, and thus be destroyed. A few years since, in the month of June, he stripped the bark off the body of a small honey locust tree which was standing near plum trees. A day or two afterwards, on passing this tree he found quite a number of curculios feeding on the alburnum or newly forming layer of wood. For some days after this or until the end of the curculio season, he daily picked about as many curculios off this tree as were caught by jarring some eight or ten plum trees which were near.

He concludes that at present there is but a single mode known by which curculios can be kept under control, and that by capturing and killing them. This may be done on sheets, or in small gardens the ground may be made hard and perfectly smooth under the trees by treading and levelling it, after which trees may be jarred every morning, and the fallen fruit and insects swept up and destroyed. The proprietors of quite a large number of plum trees with whom he is acquainted, have for a number of years, saved a large crop by this simple process. After the ground is once compacted and smoothed off, the sweeping will keep down weed growth, and ten minutes per tree, each morning, will be ample time in which to do the work.

Mosses in Pastures.—The New York Farmers' Club was asked a few weeks since, can land on which mosses are taking the place of grass be economically reclaimed, and grass be made to grow by any top dressing other than barnyard manure? or by any other process than that of ploughing and reseeding? The use of lime was suggested. Mr. Colton knew of a lawn that was improved by lime; Mr. Smith had a low mossy meadow; he underdrained it, limed a part of it, with good results; to another part he applied manure; but the thing which proved most effectual was the turning on of the wash from the roadside. Now the surface that starved one cow, keeps three horses and two cows, and they are sleek all summer. Mr. Gregory had known good effects from the application of soot to mossy pastures. Mr. Bragdon knew a piece of mossy land which was thoroughly scratched over with a sharp-pointed harrow and top-dressed with plaster and strong bone manure, and with good effect. He said anything which supplies ammonia will kill out the moss. Mr. Read had succeeded in killing it only by ploughing at least three times, sowing, after the third ploughing, grass seed to form a sward. In six years the process needed

repeating. What we want is some top-dressing that will effect what ploughing does, with the further good of killing it forever. Mr. Ely put two tons of bone-dust on three acres of grass land, which had much growth of moss, and the grass took such a start that it choked the moss.

EXTRACTS AND REPLIES.

WILD GARDENING.

I read a piece on Wild Gardening, published either in a February or March paper. I think it was written by S. O. J. I have lost the paper, and having a spot that I would like to turn into a wild garden, I wish to know what seeds to plant. The piece to which I refer told what would grow with but little care, and said many ladies loved flowers who had not time for their cultivation; it therefore informed them how to grow a wild garden.

Will you be so kind as to republish the article, or will S. O. J. inform me through the FARMER what to plant? AN INTERESTED READER.

Groveland, Mass., 1871.

REMARKS.—A portion of my garden is devoted to the culture of wild flowers, and I enjoy them highly. I cannot make the first darling of the spring—the fragrant May flower—bloom out of my fernery. There it opens its sweet eyes in February, and rejoices my heart when all is wintry and dreary.

But the Blood-root (*Sanguinaria Canadensis*) blossoms in far greater beauty in a cultivated border than in the meadow by the brook-side, where I found its fair blossoms several years ago, tightly enfolded in their warm green cloaks. By digging deeply down for their bloody roots, I managed to transport them to my border so tenderly that they bloomed directly and as fresh and lovely as if they had not undergone a "change of base."

The next year the blossoms took unto themselves another row of petals, and have bloomed so yearly. They are the belles of my parterre in the early spring. Their light green, shield-shaped leaves are easily recognized after their starry petals have fallen, and it is a good time to transplant them now. They seed plentifully, and I have a large bed of them.

The wild Anemone which rings its pearly pink-tinged bells at every breath of wind, will transplant easily. Its leaves are shaped like the parsley fern, and though its flowers are departed, its roots can be easily distinguished.

The Dog-tooth violet, with its curiously variegated leaves, is also a very pretty flower. It has a bulbous root, and it grows plentifully in the meadows near the pine woods.

The Trillium with its triune leaves, is very desirable. One variety of it has dark chocolate flowers of a large size; the other has lovely white flowers tinged with pink. The roots can be easily transplanted at any season.

In my walks, in the early spring, a basket and trowel always accompany me, and every pretty flower I see is immediately impressed into my service. I wait until night fall to set them out, but give them plenty of water as soon as I return home. Thus treated, I rarely lose any.

The "Spring Beauty," a dear little pink and white darling, has decorated my garden this many a year. It is a dwarf plant of rare beauty, which springs up amid the greenest of mosses among the rocks by brook or rivulet. It can be grown from seeds or roots.

The Meadow Rue is a stately plant, with a fine stalk of feathery white flowers. It does not bloom until late in June, and continues to flower through July. Its foliage is deeply serrated like the locust, but more finely cut, and the under sides of the leaves are of a silvery whiteness, so that it is frequently called silver leaf. It has been cultivated in my garden for several years, and there is no Spirea that excels it in beauty and grace. Did it come from Japan, and were it a high priced novelty, it would be sought for by all flower lovers; but as it is plentifully scattered all over the country, and blooms by the roadsides, in the meadows and dells, it is *too common* to be cultivated by many; yet it attracts more attention in my garden than many a greenhouse darling. It is very lovely in bouquets and vases, and mingles perfectly with roses and verbenas. Its feathery, waxen white plumes contrast finely with brilliant colors. Every lover of flowers should seek for the Meadow Rue.

Jack in the Pulpit is a pet of mine. I like the furry flower; so prettily striped with chocolate and green, and folded so carefully over the "Jack in Green."

The charming pink Azaleas or Mountain Pinks are very beautiful shrubs, worthy of all praise. The rich, rosy pink flowers perfectly cover the stems before hardly a green leaf is to be seen upon them.

The woods, meadows, and hill sides of New England abound with many lovely flowers which would richly repay the cultivator. I do not recall the article to which "An Interested Reader" refers, and doubt if I wrote it,* but I am pleased to tell her of my success in "Wild Gardening," and must beg her pardon for the delay of the answers. Her letter forwarded to us from the office of the FARMER was mislaid during the unavoidable upheavings of the annual house-cleaning.

The wild Aster grows to perfection in my garden. As it does not bloom until late in August, I had nearly passed it by; but it deserves most honorable notice. There are two varieties, the lilac, and the white. Both of them are very desirable, and will grow without any care, and bloom profusely until the frost cuts them down. They grow over two feet high, and the flowers are in large clusters. They are found all over New England. Bryant mentions them in his ode to "*The Close of Autumn*," thus:—

*The article alluded to was written, we think, by Mrs. H——, of Georgetown, Mass., author of a series of articles printed in the FARMER last year, entitled "Wild Wood Studies."

"And on the hill the golden rod, and the aster in the wood."

The Golden Rod is also a beautiful flower, which should be more highly appreciated. There are many garden flowers that are not half as charming.

In every country garden there is a spot where a "wild garden" could be planted, and great pleasure reaped from it. I have mentioned but a few of the flowers that could be obtained. In May, one can find at least thirty different kinds of flowers, all of which are lovely. The orchis, which blooms in July and August, is far more beautiful than half the flowers that are cultivated. It can be found in rosy lilac, lemon color, orange color, white and pink. It grows in marshy ground, by the side of running brooks, and on the edges of the forests, and will bloom under your care, if its tastes are consulted. The wild violets, though they lack the fragrance of the English violet, are very pretty, and they are to be found in blue, yellow, white, and, once in a while, pink. All are desirable for home culture. S. O. J.

PREPARATION AND USE OF MUCK.

If it will be of any advantage to "Young Farmer," or anybody else, I will cheerfully give my experience in using muck. When I was a boy and young man, my father used to dress his grass land in the spring with pure stable manure; using the best he could get out of his yard. When there was rain enough, it would do very well; but sometimes the atmosphere would get more than half of it.

I abandoned the practice years ago. For ten years or so, I have used muck. I draw it out in the fall, leaving it about one and a half feet deep, so that it can freeze and thaw entirely through. The action of the atmosphere has a very beneficial effect upon it. The next fall, I buy wood ashes when I can get them, and mix six bushels with a cord of muck. The ashes and muck are mixed by ploughing,—repeating the operation at intervals, three or four times before using, and then spreading it on the land in three or four weeks.

I prepare it in the same way, and spread and harrow in. For corn I formerly used salt with muck, but do not know whether or not it did good. When I could not get ashes I have used lime, but I do not consider it near so good, and very often I have used fish guano. You can add to the mass any good fertilizer you may have.

I do not know but that my grass land produces as well under my treatment as it did under my father's. This grass land is so situated that it cannot be ploughed. I spread on eight or ten loads to the acre. Of course more would be better; and also more ashes with the muck would be better. My grass and tillage lands are dryish with a porous soil.

FAILURE OF CROP OF GRASS FIRST YEAR.

I want now to refer to another subject. Writers in the FARMER, long ago, said they could get good crops of hay the first year without seeding with grain. That was just what I wanted, and so I tried it. Seeding nearly an acre of good land to clover, herdsgrass and red top, I expected to cut a good crop of hay; but the grass would not grow. It amounted to pretty good feed in the fall. If I had sowed oats the crop would probably have been worth $50. But this I will say, the hay crops that followed for two years were much the best that I ever got on the same land. Two years ago, I made trial again on a small piece of land, the best on the farm, with the same results. This convinced me that sauce for the goose is not always sauce for the gander; that is to say, no general rule will apply in all circumstances and conditions, or, in other words, what is good practice on one farm will not prove so on another. ELIJAH GUNN.

Montague, Mass., May 26, 1871.

ZONALE OR HORSE-SHOE GERANIUMS.

I have been much interested in S. O. J.'s articles on "Window Gardening," and I wish to thank her for the information given on the cultivation of plants.

I always search every newspaper for articles on gardening, and have taken great pleasure in such articles when found. I wish to inquire of S. O. J. if what she calls Zonale Geraniums are what is commonly known as the "Horse-shoe Geraniums." I have asked a number of my friends if they were acquainted with Zonale Geraniums, and they have said they knew not what they were. I am sure I should like them, as S. O. J. says they are never infested by insects, and will bloom ten months out of twelve. My verbenas have nearly died out from the effects of green lice. I have tried showering in warm water, but the lice stick so closely to the leaves that it nearly ruined my tall plants trying to wash them off, and I find it impossible to get rid of them. S. A. R.

REMARKS.—The Zonale Geraniums are of the class formerly called "Horse-shoe"—the dark chocolate zone of the leaf giving the name. They are a decided improvement upon the old fashioned varieties, and are found in every shade from the richest scarlet to the purest white. No garden is complete without them, and they require but little care. During six months of the year they can remain in sandy soil, in pots or boxes, in the cellar. In the middle of May I planted out eight roots of all shades from scarlet, salmon, pink, and white, which were put into the cellar in October, and had not been watered once. The cellar was perfectly dark and damp, but was frost proof. They are all covered with leaves now, and will soon be in full bloom.

Should S. H. R. desire it, when the Zonale Geraniums in my possession, are more fully grown, I could send her cuttings by mail with pleasure.

Green lice can be killed by smoking the plants with tobacco. A good way is to hold a lighted cigar under the plants, and the smoke will stupefy them so that they will fall off, and can then be brushed up and destroyed. S. O. J.

USE OF SALT.

In an article in the last FARMER, a correspondent says that the use of no injurious stimulant and the practice of no wrong habit can be abandoned without experiencing the inconveniences of a reaction of the system, and would account for the ill effects of withholding salt from men and animals on the same principle. To this I would reply that the taste for salt is natural to both man and beast, while the taste for stimulants is artificial or acquired. In their native state, animals lick salt with the greatest relish, but, wiser than men, they refuse to meddle with tobacco, alcohol or opium. The desire for salt is not therefore a reaction of the system, but evidence that salt is a requisite of the animal economy; a necessity to health, though perhaps not as *food*.

Mr. Hardy's argument may be ingenious, but it is unsatisfactory. The lessening of milk, the increase of parasites and of disease consequent on

depriving cattle of salt are not the result of reaction, but the effect of not supplying what the system naturally demands. The reaction from withholding tobacco, alcohol and opium is the result of an unnatural state of the body. Hence while these stimulants destroy life and health and are the greatest curse to mankind, salt is not only harmless but essential to the animal economy.

Warwick, Mass., May, 1871. A SUBSCRIBER.

CORN AND WHEAT GROWING.

I beg to say a word to Mr. Poor in regard to his famous crop of wheat, or rather wheat straw, that he talks about in the FARMER of May 27. The crop of wheat is a good one, but what about the straw? I see that he is inclined to think "K. O" a man of straw; but would not the saddle set well on his own shoulders, when he comes to tell of 10 (ten) tons of straw to the acre? Ten tons of straw to the acre and only 36 bushels of wheat, that is straw with a vengeance! As the article stands now, I can see no place for a misprint, for it is carried out at $6,—$60! That one item to my mind must make a difference of some $42 which shall be placed to the credit of the corn, or rather thrown out of the account altogether. I am allowing a ton of straw to twelve bushels of wheat and I think that that estimate will be called liberal by the majority of wheat growing farmers.

I also notice that some of the items charged to the corn are loud, to say the least, such as:—"To furrowing by horse and man $2; board of man and boy planting, $4; weeding and hoeing three times, $14; shelling, $5; total, $25."

Let me estimate a little on his $25. Furrowing, horse and man, $1.50; board of man and boy planting $1; weeding and hoeing three times, $8; shelling 78½ bushels at 4c. $3.14,—total $13.14; a saving of $11.86, which will cause the account to stand,

Profit of corn an acre	$67 48
" " wheat "	50 00
Balance in favor of corn	$17 48

I do not know what Mr. Poor himself pays for shelling corn, but I see that he estimates at a fraction over six cents, while I should be glad of a job for the entire winter at four; which will be quite an important item in shelling the corn crop of the season of 1870.

All the advantages that I can perceive that will arise by raising wheat, consist, first, in the fact that the farmer will have the consolation of knowing just what he is eating,—whether it is bread made from damaged, sprouted, mouldy wheat with a large addition of white corn, or the genuine simon pure article; and, secondly, wheat fills an important place in a rotation of crops, and the real cost is not so much as the seeming cost, for the manure is gathered on the farm of which part is not used, and a share of the labor comes when there is no heavy calls on the farmer's time. Consequently I advocate the raising of wheat in New England, but will not and cannot advocate the idea of giving wheat the benefit of a credit of ten tons of straw to the acre, when three is liberal. JONES.

Addison Co., Vt., May 29, 1871.

COAL ASHES AS A FERTILIZER.

I read in a Massachusetts paper an article headed "The Value of Coal Ashes." Having made one trial of them I wish to give my experience. Some few years since I was at market, when a friend said to me there are two barrels of coal ashes that you may have for carrying away. I accepted the offer and took them home, some eight miles, for trial. I ploughed a piece of old ground to plant with beans, and furrowed out. I then spread in a part of the rows a quantity of the coal ashes; and in other rows I spread some old manure. The beans were planted and tended precisely alike all through the season. At harvest time I gathered my crops, and to my disappointment I found the rows manured with ashes had produced less than half as much as those treated with the old manure. So this settled the question with me, as to the value of coal ashes. T. G. HOLBROOK.

Bedford, N. H., May, 1871.

FOULS IN COWS AND OXEN.

The following receipt was obtained from a cattle doctor, and I have succeeded in curing the worst case I ever saw,—so bad that the disease had broken out above the hoofs. Take one ounce of quicksilver, and one ounce of aquafortis, put the quicksilver first into a bowl and then the aquafortis. When it becomes milk warm turn it in half a pound of unsalted lard, with four ounces of alum, pulverized fine, and stir it until it is cool. For application, melt a piece about the size of a walnut, and put it on with a feather.

South Lee, Mass., 1871. JOHN MCALLISTER.

REMARKS.—Quicksilver and aquafortis are rather dangerous articles to handle by those who have but little experience in compounding medicines.

YELLOW SNUFF FOR CATERPILLARS.

A few days since I discovered that the caterpillars had begun their work on the apple trees in my garden. There were hundreds on a single branch. For experiment I got some yellow snuff and sprinkled it into the nest and a little onto the branches around, and to-day I have been out to see what the effect was. I found not one single living caterpiller on the trees. I have tried kerosene oil quite a number of times in years past, with not half so good success, and the oil destroyed some of my trees.

M. V. B. DREW.

North Danville, Vt., May 29, 1871.

WOOD ASHES.

I have a lot of unleached wood ashes that are worth here 12½ cents per bushel. Are they worth more than that for manure? If so, on what crops are they of the most benefit and in what condition are they to be applied? Are they good to use in mulching a young orchard? H. L. S.

Alburgh, Vt., May 8, 1871.

REMARKS.—Dry, clean wood ashes are richly worth twenty-five cents a bushel, we think, to any farmer who wants more manure. You can scarcely use them on any crop without very sensible results. A handful thrown around the corn plants at the first hoeing, will greatly increase their growth, and give them a highly dark green color. Scattered in the hill before the potato is covered, or about the hill just before hoeing, will have similar results. Sown broadcast on the mowing fields at the rate of as small an amount as five bushels to the acre, will greatly increase the growth and color of the crop. Besides this, their beneficial results will continue for several years in succession. Strewed over young cabbage plants, squashes, melons, or any of the garden vegetables, such as tomatoes, beets, onions, turnips, or carrots, wood ashes not only tends to disturb the insects that infest the plants, but has a decided influence on their growth and quality. All the ashes made on the farm should be collected with

care, kept dry and applied to the crops. Nothing could be better for the young orchard. Spreading ashes broadcast over the surface would be more useful than as a mulch for the trees. The roots will soon find it if spread. It is better to use a moderate quantity annually, than to apply a large amount at one time.

Ashes may be safely used in composts of loam, muck, straw, or dry fibrous materials; they would tend to reduce them. If in composts where the dropping of cattle are a portion of the material, the ashes should be applied immediately before the compost is to be used,—and the compost be slightly covered by the soil. The easiest and best way, however, is to apply ashes in a dry state and unmixed.

A QUEER WORM.—THE SUGAR SEASON.—RATS.

I have for a long time been looking for some notice of a worm, which appeared in great numbers all about here last spring. They were found in woods and orchards, mostly near the ground, often in large clusters in ice. Never saw them before. Their general color whitish, from three-fourths inch to an inch in length. "What is that a sign of?" "Sign of suthin'," remarked my sapient wood chopper.

The sugar season opened here at the same time with Massachusetts, and was an extraordinary one.

It will perhaps interest many of your readers to know that there is quite a large section of country where the rat is wholly unknown. There are plenty south, north and west of us, but none here. We are not anxious for their company, but suppose that they will come on the railroads if they learn that there is one corner of the earth which they have so far failed to discover and colonize. Hope they don't read the FARMER. J. G. F.

Stanstead, Can., June 1, 1871.

REMARKS.—We do not recognize the worm from the above description. If his habitat is in the *ice*, he will not, probably, destroy our field and garden plants and fruits.

The rats will undoubtedly make you a call one of these days. They may have been waiting for the renewal of the reciprocity treaty! In the neighborhood in which one of the editors of the FARMER was raised, rats were unknown until he was some twelve years of age. The discovery of a colony in the granary was more interesting to those of us who had never seen a rat than to the older people who had been familiar with them in the sections from which they emigrated.

WHEN SHOULD A HEIFER HAVE HER FIRST CALF?

Will you give us your opinion on this subject, or the opinion of some of your experienced correspondents? Is it best for a heifer to come in with calf at two years old? Some say so, and argue that they save a year's keeping, and that heifers thus managed generally make quite as good cows. But does it not take a year's growth out of them, and just at the time they ought to have it to get properly matured to bear offspring, and will they not last a year longer and make larger and better animals not to be allowed to bring a calf till they are about three years old? W. H. W.

Shirley Village, Mass., 1871.

REMARKS.—In his work on cattle, Mr. Allen, a person of much experience, says the time at which heifers should come in depends greatly upon the manner in which they have been fed, and the condition of flesh they may be in. If they have been fed on good muscle-making food, with growth unstinted, they may safely be coupled with the bull at fifteen to eighteen months of age; and better to a small bull than a large one. The following particulars, he says, are decided advantages.

1st. The milking faculties of the growing heifer are more easily stimulated into action than if neglected to twenty-seven months or later, (bringing her calf at three years of age,) and thus apt to prove a better milker.

2d. She is inclined to be more docile and easier handled and managed.

3d. She arrives at her maturity of production for dairy purposes *a year earlier;* and

4th. A year is gained in her profit.

We are inclined to think that where heifers are well kept, one coming in at two and the other at three years old, that not much difference will be found in them at the age of *four* years. Young animals, of good growth and in health, bear the burden of gestation and parturition without much apparent inconvenience or cessation of growth. At three years of age the parts may not be so compacted as to offer any obstruction, but upon the whole it is, perhaps, best that a strong and healthy heifer should come in at two years of age.

CORN AND WHEAT GROWING.

I would say to Mr. Jones that it was *not* "my famous crop of wheat, or rather wheat straw," mentioned in the FARMER of May 27. I quoted from "K. O." and his "friend," and said so expressly. It was his friend who estimated his "straw at ten tons per acre, at $6 per ton." I think Mr. Jones cannot find fault for my so doing, although I thought it a stupendous exaggeration.

I based my items of labor in producing both wheat and corn (he gives me no credit on the wheat) at about Long Island prices, which may be in excess of prices in Addison County, Vt. I charged manure to wheat the same as to corn, though probably the wheat did not get half the quantity, as is usual with the small grain crops.

We know, and every farmer should know, that his profit lies in the *bushels* he can get *per acre*. The Byfield almshouse in 1847 or 8, took the premium at Salem, Mass., on 116 bushel. Here was a *profitable* crop; but if four acres (about the average for New England,) had been cultivated to obtain the same result, the farmer would have lost money. The principle of great crops is the only true policy "to make farming pay." It is the way to save wages, board, washing and grog of the hired men. When farmers secure their crops from less than one-half of the acres now cultivated, they will find their lands as well as themselves growing rich, and their anxiety about paying hired help much diminished.

But I have a problem which I wish my friend Jones would solve. We will plough in an acre of green sward, second crop, on good corn or grass soil, and sow on the sod two bushels winter wheat. If a good season, we propose to harvest thirty bushels wheat, more or less, depending on the soil and amount of grass ploughed in. We propose to sell three tons straw at $10, say $30. The whole

cost from the plough to the granary is not over $22, leaving us thirty bushels of wheat, say $60, and a surplus of $8 on the straw over cost of raising. Now if "Jones" can work out an acre of corn at $1 per bushel—the present price—at a profit of $68 we should like to see something of his mathematics. A crop of spring wheat, *manured*, would of course cost more. Yet corn cannot be made so cheap. It is a crop of incessant labor; yet every farmer should manage to grow all his corn for his domestic wants.

If the Vermont farmers wish to feast their eyes, let them come and see the winter wheat fields on this island. H. POOR.

Long Island, N. Y., June 13, 1871.

A CHAPTER ON WEEDS.

Weeds, weeds, weeds! How they grow and how they prosper! How like an armed multitude they spring up around us, crowding in where "their room would be much preferable to their company," and laughing at our attempts to destroy them. Some have thought it advisable to treat them as tender plants—to start them in a hot-bed, and transplant them with the utmost care; as in that case heat and cold, beasts and birds, worms and bugs would labor unitedly for their destruction. How this plan would work I cannot say. But if we must have weeds, we might as well have pretty ones. It might require some time and care to convert asters, pansies, zinnias and portulacas into vegetable gypsies. But when once so converted, they would be much more satisfactory than wild parsnips, nettles, Roman wormwood or Canada thistles. I would not reckon in this class the despised plant known as "pigweed," which would be sufficiently beautiful if it came from over the seas, with a long name attached to it, and costing "fifty cents per packet of five seeds." It is an easy matter for poppies to become weeds; they seem to take to the business quite naturally. But with a little encouragement, and by not allowing the above mentioned and similar weeds an inch of standing room, it is quite likely that many delicate and beautiful flowers might fill the places now so unworthily occupied. Think of a rich mat of portulacas covering rocks and rubbish heaps; of stately hollyhocks springing from the crevices of stone walls; of larkspur and coreopsis disputing the ground with beets and cabbages; of morning glories, with luxuriant foliage and lovely blossoms, ready to conceal every deformity or adorn every beauty of the landscape. Is not this "a consummation devoutly to be wished." MATTIE.

Marlboro', Mass., June, 1871.

THAT EXTRA PAGE.—SEASON IN CANADA.

Put me down for one who wants the additional page of agricultural matter in the FARMER. It seems as though farming would be pretty dismal work without the light of the press; and the FARMER certainly appears to me to be *the best* luminary of this kind which beams upon the path of the husbandman in New England and Canada. In fact, it seems as though I could not farm without it. The weather about here was quite cold and backward at first, this season, with much rain; but of late it has been fine, and farmers for the most part are well along with their spring's work. Quite a breadth of wheat has been sown hereabouts and it promises well unless the weevils injure it. Potatoes, also, are pretty extensively planted, on account, probably, of the high price this season (fifty cents per bushel) which is pretty strong considering that a duty of twenty-five cents per bushel has to be paid before reaching any considerable market. Potatoes, hay and live stock, especially horses, have been exported to the United States' markets the past winter and this spring, more extensively perhaps than ever before from this immediate vicinity. Hay has been low, and I have known of a fair article being sold for $5 per ton. The new crop, notwithstanding the light fall of snow last winter, is quite promising, the early and copious rains having given it a good start.

Barnston, P. Q., June, 1871. W. H. W.

THE SEASON AND CROPS IN CANADA.

The spring opened early,—some grain was sown in the third month (March.) The greater part of sowing was done in the fourth month. Land was in excellent order early. It is said grain was never put in in better condition. The fifth month was rather dry. From the 6th to the 25th no rain fell. The nights were generally cool, and frost was seen several times; the last, I think, was in the morning of the 24th. The roads became very dusty, and the top of the ground was dry. The vision of many people become disturbed by the prospect of another dry season. Ruined crops and empty purses haunted the waking hours of those—and their number is legion—whose faith in an over-ruling Providence is too weak to enable them to trust in His promises. A fine shower on the evening of the 25th upset all such apprehensions. The 26th was warm and somewhat cloudy. Vegetation was rapid. Since that we have had frequent showers—generally light, but enough to keep things growing. The greater part of grain in this vicinity looks fine. On stiff clay soil some seed did not come up well, and such fields will be light. Some fields of barley are beginning to head. Corn is up and looks well. The hay crop will be light. Clover was nearly all killed. Apples promise well. Pears not so plenty as in some years. Plums and cherries will be scarce. The season continues early. Flower gardens are now in their glory. Roses and pinks are abundant. Strawberries are ripening, which is very early for this place. We had fine ones, of the Hovey Seedling variety, for tea the 9th inst. The currant worms are troublesome, but they did not begin their depredations until later than usual. A dose of *hellebore* dusted from a pepper-box, destroys them at once. I had some fine gooseberry bushes that were loaded with fruit, but the mildew has taken them all. Is there any preventive? Cut worms, called the *grub* here, are very destructive. I had a fine bed of onions from black seed, but the worms have eaten nearly all off. I have dug out and killed a great many, but there are some left. In some gardens they confine themselves principally to beets; in others to cabbage plants or carrots. The last three or four days have been cool. In the morning of the 10th, the mercury fell to 46°. GRANITE.

Bloomfield, Ont., 6 Mo. 12th, 1871.

AGRICULTURAL ITEMS FROM MAINE.

It is getting to be much too dry for grass, wheat, oats, and the planted crops. It has been a very singular spring season. Early it was very warm, fine weather; next, when farmers wanted to begin spring's work, it was wet and cold, and lastly, it has been the hottest that we have known in May, one or two days at a time, and then it would be about as cold as any one ever knew it for the time of year. But amid these changes our farmers have put in a good amount of all the crops usually cultivated with us.

The most interest, perhaps, and more than usual, too, is in the direction of potatoes and corn. Much experimenting with commercial fertilizers has taken place on cultivated crops; and a much larger amount of them has been used this spring than in any one year before.

The increased market facilities by the railroads

opens up a quicker cash return for hay than can be obtained by feeding it out. Straw and other coarse feed, with a little corn or some kind of roots do quite well for the stock which is intended to be kept. Of these materials many of the farmers have a large supply, which a few years ago were of little use, but can now be run through the stock and their value much increased every way.

Under this view, perhaps, it is admissible for our farmers to make up the deficiency by the introduction of foreign manures, providing they have husbanded the resources of the farm, or, if not, if it will stimulate them to set about so doing at once.

The farmers of this part of Maine let much manure go to waste in the days of her early settlement, from many causes; but a favorable sign of the times is, that year by year, uninviting portions of our hillsides are left to clothe themselves again in their natural habiliments, while the better portions are more carefully ornamented as well as cultivated. Hence, the beauties of nature and the embellishments of art are continually springing up side by side, in new places, and with new charms for the beholder.

O. W. True.

Farmington, Me., June 9, 1871.

SEASON AND CROPS IN WASHINGTON COUNTY, VT.

We had a slight frost last night in low places. Vegetation looks well, although it is quite dry. Our hay must be light, any way. The currant worm attacked my bushes the last week in May, and I applied the poke, as I did last year, and cleaned them perfectly clear. My bushes now promise well for a good crop. Some of my neighbors have lost theirs by last year's neglect, but those who tried the poke or hellebore saved their bushes. I would say to all lovers of the fruit it will pay to save your bushes.

E. W. O.

Montpelier, Vt., June 10, 1871.

THE HAY CROP.

On page 365 of this number, we had an article upon the importance of this crop to New England farmers, and gave some reasons why grass makes more and better hay when cut just as the seed is formed than when it is allowed to stand until the seed is nearly or quite matured. A reference to two or three other points in regard to the grass crop will be seasonable and is of importance. After speaking of the value of the crop, and the best time to cut it, the next item for consideration seems to be,—

How Shall it be Cured?

In order to retain all the valuable properties of the grass, the operation of curing it is just as important as it is to observe minute details in curing beef or ham for our tables, or in preparing the delicate preserves of plums, peaches, strawberries and other fruits. Curing the hay is a process of cooking it, so that it will retain its good qualities, and can be preserved with them for an indefinite time. It is one thing to *cure* grass, and another thing to *dry* it.

Within our recollection, the hope of the farmer was that he might have unclouded, hot days, successively, during the haying season. We need both now,—but more attention to the effect of exposure of grass to two or three such days has convinced us that grass can be cured with very little exposure to a bright, hot sun.

Cut herdsgrass, then, when the blossom is just passing out. It has reached its full growth at this time, is still tender, and now develops its sugar. We present a single fact, stated by not only a scientific man, but a most observing farmer, in order to settle this matter of the time of cutting, as far as possible.

In the Boston *Journal of Chemistry*, Dr. Nichols, the editor, says that he had one acre of grass, redtop and clover, that was cut June 19, and the hay stored by itself. On the first of last March he put his herd of ten cows upon it, and the immediate increase in the flow of milk amounted to ten quarts per day. The hay fed to them before was of the same variety but cut after the middle of July. The early cut hay "spent" fully as well as the later cut, no more of it was consumed, and the Dr. estimates that the money value of the product from this hay, fed to ten cows, was greater by near a dollar a day than that from the other.

Cut as much grass as the force employed can comfortably handle. If it lies in swaths, as left by the hand scythe, or left in bunches by the machine, spread it evenly and leave it exposed to sun and air until it is thoroughly wilted. This will require from three to five or six hours. By this time the water in the grass will have pretty much escaped, leaving its juices holding in solution the valuable qualities of the grass, and in themselves not spoiling but keeping the hay soft and pliant. When in this condition, make and cock the hay while it is warm, which should be done as early as four or five o'clock. If covered with caps—which will sometimes pay for themselves in a single season—the cocks may remain two nights. After the dew is off, on the third day shake out the cocks, leave the hay to sun and air for three or four hours, and then get it in.

We say above *shake* out the cocks. This is an important operation, especially if the hay has been gathered by a horse rake. Turning the cocks over, or removing them, a forkful at a time, and laying it upon the ground, does

not open the hay so as to admit sun and air. A gentle *shaking* is the only process that will answer the purpose desired. Many a load of hay is essentially injured by neglecting this particular, which might have been housed in perfection had it been properly attended to. By this neglect, damp bunches are left, when a large proportion is sufficiently cured, which makes it neceesary to keep the whole out a day longer.

When the hay is got into cock while it is warm, it being also still somewhat moist, it passes into what is called "the sweating process." This cures, fixes the color, preserves the fragrance, and dissipates so much of the moisture that the hay may be preserved in perfect condition.

"As the hay goes into cock, so it will come out—as green almost as the grass itself. The hay will feel heavy; and it is heavier than when dried to death; but it will not spoil; it is cured. You have the same grass here which so recently was in full bloom, and so tender with juices. And when you come to feed it out in the winter, you will see the benefit of curing grass in this manner, instead of bleaching it and drying it into straw. In market, its superior weight is an advantage—its color also, and its fragrance,—for the fragrance of the early harvest field is still there."

If the hay is not covered with caps, perhaps it would be better to *shake it out* the second day, turn it about noon, and get it in soon after one o'clock. This course would be better than to run the risk of rain.

Rain on the hay, or even a heavy dew, injures it materially, by washing away the gum and oil which it contains, and which are important qualities. Hay that was wet in curing has little or no fragrance left. Other portions of the grass, besides the gum and oil, such as the sugar and starch, may be so easily made soluble as to be washed away by rain. Every precaution, therefore, should be used to prevent its being wet.

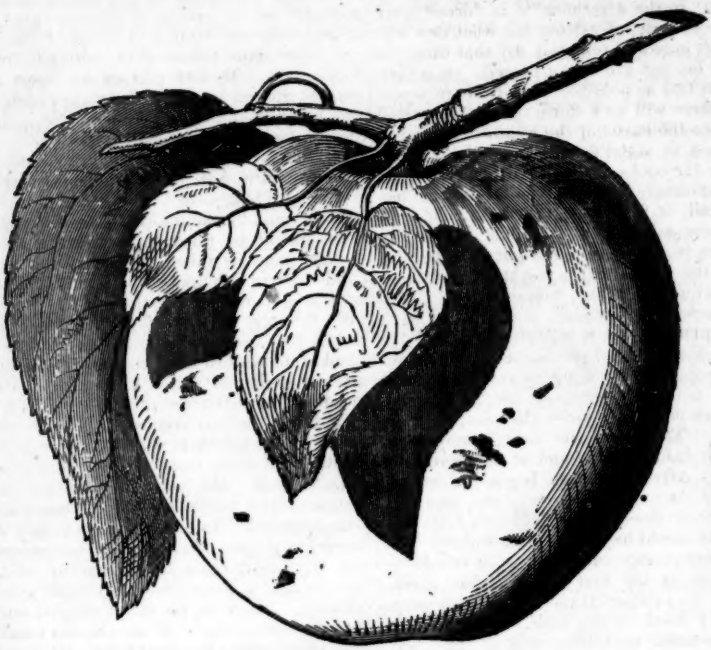
The curing of clover hay should be somewhat different. It should be cut in the early part of the blossom and allowed to remain in the swath through the first day. If the crop is a light one, it had better be collected into windrows and left in that condition over night. If a heavy crop, turn it upside-down and leave it so until the next day. In either case collect it carefully and cock it on the second day. If covered with caps it may remain so for two nights more, then open to sun and air for three or four hours and get it in. If the weather is cool, it may be better to remain even longer than two nights in cock. If not covered with caps, there will be more risk, and the time of leaving it out must be governed by the prospects of the weather and the force at hand to take care of it.

ENGLISH SPARROWS.

The New York Farmer's Club recently had a talk about these birds, which were brought over from England to New York a few years since, and which appear to be spreading rapidly in all directions; having already been seen twenty miles from the city. Mr. Andrew Fuller said that two pair put on his place had driven all other birds away. He did not think the sparrows were entitled to the credit they generally received of causing the disappearance of the span worms from the trees in the city, but said, "in truth, they had nothing at all to do with the disappearance of the worm, that being effected by the ichneumon fly." Several gentlemen having stated that the sparrows did devour worms, to their certain knowledge, Mr. P. T. Quinn said:—

There is no doubt in my mind but that they will feed upon insects when they can get nothing else to eat, but they will also become very destructive and injurious to the fruit grower in the country. There is a great deal of sentiment about birds. I know that some of them are the allies of the fruit grower, but I was born where the sparrows were pests in the worse sense of the term; where they not only eat the fruit, which we would be willing to forgive, but they feed also on the blossoms, and so the subject comes up whether that variety of bird will greatly benefit the fruit-grower. I have a neighbor, and he called me into his fruit garden and showed me the blossoms of his trees all picked off; he said that he had not seen any sparrows around, but his place is only a stone's throw from mine, and we had had quantities of them, and there was no doubt but that the sparrow was the depredator. If he would only eat the ripe fruit, I would say let him have it, as much as he can eat, but when he eats the buds, then he is an injury, and I fear that we shall regret that they have ever passed out of the city.

DIFFERENCE IN EGGS.—The *Germantown Telegraph* well says, there is a vast difference in the flavor of eggs. Hens fed on clean, sound grain and kept on a clean grass run, give much finer flavored eggs than hens that have access to stables and manure heaps and eat all kinds of filthy food. Hens feeding on fish or onions flavor their eggs accordingly—the same as cows eating onions or cabbages, or drinking offensive water, impart a bad taste to the milk and butter. The richer the food the higher the color of the egg. Wheat and corn give the best color, while feeding on buckwheat makes the eggs colorless, rendering them unfit for some confectionery purposes.



EARLY SWEET BOUGH APPLE.

The apple from which the above engraving was sketched by our artist, grew in the garden of W. W. Wheildon, Esq., Charlestown, Mass. This fruit, which is adapted to various climates and soils, is known in different localities as the Bough, Yellow Bough, August Sweeting, Sweet Bough, &c. It is not tart enough for pies or sauce, but is fine for baking, and sliced into a bowl of bread and milk, it furnishes a dish fit to set before a king, or even before the men and boys who have been hard at work in the field all day, and do not care for a meat supper.

Mr. Thomas, in his American Fruit Culturist describes it as "large, roundish, remotely conical-ovate, sometimes as distinctly conical; pale greenish yellow; stalk one-half to an inch long; basin narrow, deep; flesh white, very tender, with an excellent sweet flavor; ripens from the middle to end of summer. Tree a moderate bearer; shoots yellowish, somewhat irregular, ascending; top round-headed; leaves obtusely crenate." Mr. Cole adds, "calyx narrow and deep, extending tube-like into the heart of the fruit; the tree is hardy, bears well in light soils, and the Early Sweet Bough is the best early sweet apple known."

For the New England Farmer.

THE NEW METHOD OF CURING HAY.

The approaching hay harvest has again brought up for discussion in the columns of the Farmer the subject of curing hay. Without any expression of opinion in relation to the subject of my own, some quotations of the opinion and experience of others will be made in relation to the method, now practiced by a few bold hay-makers, of storing hay before it is fully dried.

At the Farmers' Convention held at Lewiston, Jan., 1870, the subject of cutting and curing hay being under discussion, Capt. Taylor, agent of the North Wayne Scythe Factory, described his method of curing and housing his hay crop. Some five years ago, he became satisfied that farmers generally dried their hay too much, and he began experimenting. His first experiment was to dry the hay about half as much as usual, and it came out well. Other experiments were tried, and now his practice is to begin cutting grass

at nine o'clock in the morning, if the day is favorable. In the afternoon it is turned over for the purpose of getting out what dew and dampness may still remain. By that time the hay will be, not dried, but heated. It is then put up as fast as possible, and if the prospect is that there will be a storm, the hay is carted directly to the barn; if the weather is good it is allowed to stand in cock over night. The next day the cocks are inverted, and as soon as the moisture collected in the bottom has evaporated, it is carted to the barn, and trod in the mow as solid as possible. This will come out in the winter as bright as when first cut with the scythe. It is just right. If there is no water in the hay, it may be put into as large a mow as you please, and trod as hard as you please, and it is perfectly safe. He was then feeding hay put in the last season when his neighbors thought him crazy, and it was as perfect as it could be, and worth twenty-five per cent. more than that dried as formerly. The top of the mow is never covered with refuse straw, and he has never lost a pound. After the mass begins to sweat, the top of the mow will be very wet, and perhaps two or three inches will be a little colored. He would have the grass nearly mature before being cut—that is, it should be cut as soon as the first blossom has disappeared. No care is taken to have a mow completely filled at one time. He puts in as much as possible each day, and if from any cause several days intervene before more is placed upon it, there is no harm comes from it. Much importance is placed on packing it well and treading it solid.

At the same discussion, Mr. Rideout of New Gloucester, said that five years ago he built a new barn, and partitioned off bins on the bay side and on the scaffold. As soon as the dew was off in the morning the mower was set to work. If any moisture remained on the grass when cut, it was turned over about eleven o'clock; if not, it lay undisturbed. At two o'clock, the horse-rake was set in, and the teams set to hauling. All was in the barn by four or five o'clock. One day, eight acres were cut and housed. Each bin was filled full before another was begun, and trod as hard as possible. No covering was used. Two years ago, twenty-two loads were carted in one afternoon. Two loads were put upon the scaffold, and the remainder was put in the bays and trod solid. That put in, the bays came out as bright as when put in but that upon the scaffold was not fit to be eaten.

At the Farmers' Convention held at Farmington, Me., last January, Mr. F. V. Stewart of that town was called upon and gave his method of curing and housing hay. The mowing machine is set to work as soon as the dew is all dried off—say at nine o'clock in the morning. By eleven o'clock as much is cut as can be cured for that day. The grass is allowed to remain just as the machine left it till one o'clock in the afternoon, when two men are set to raking with hand rakes—the grass being very stout and heavy. The loaders follow immediately after, taking it directly to the barn. By five o'clock at latest all is cleared up and snugly stored in the barn. All the hay carted in one day is placed upon the same mow, and if the mow is not filled in one day, the product of the next day's work is stored upon it. In no case is hay stored on a partially filled mow after the process of heating and steaming has commenced. A mow should be filled in two days. No particular pains is taken to pack it or tread it solid. After a mow is filled, and before any heat is generated, old straw or hay is spread over the top to the depth of six or eight inches for as many tons of hay, for a sweat blanket to absorb the moisture. If a larger amount of hay is stored in one mow then a greater depth of straw must be used. Every pound of the hay comes out in the winter bright and fragrant as when put in, and is believed to be worth more than hay dried in the common way. He has stored his hay in this manner three years and has not had a single pound injured. In order to have it save when housed in so green a state, it is not necessary that it be stored in a tight barn or in tight bins, or that it be trod down air tight, as many contend. There is no secret about it only to have the water dried off in the field and the mow filled before any heat is generated. Mr. Stewart showed specimens of hay taken from the mow each year. The hay was perfectly cured, bright, and emitted that pleasant aroma so inviting to cattle, and which is found only in well cured hay. To the taste it gave that sweet pungent flavor never found in poor hay. Evidently the specimens were not what would be called early cut hay, but probably were cut just as the grass went out of blossom.

The gentleman who made the above statements are men of good standing, well known in the community, and any statements made by them are perfectly reliable. They take great pleasure in showing their hay to any one who wishes to examine it. Z. A. G.

Androscoggin Co., Me., June 14, 1871.

For the New England Farmer.

WHAT IS THE BEST METHOD OF HARVESTING CORN?

There are at least three different modes of harvesting corn; first, by cutting close to the ground, placing in shooks until the husks and stalks are sufficiently dry; secondly, by topping,—cutting the stalk off just above the ear, leaving the corn to stand thus until the corn is thoroughly dried; and thirdly, which is more seldom followed at the north, to leave the whole growth of stalk with the corn to stand until the corn is fit to harvest.

Each method has its advocates, and each considers his method superior for some reason,

if for no other, because his father always did so. But of these three methods some one must be preferable,—which is best can be determined in no other way than by experiment.

It is the purpose of this article to give the results of two series of experiments which appear to be conclusive in the matter. Having once settled upon the best mode of procedure, it is the part of wisdom for each farmer to adhere to that mode that produces the most satisfactory results.

In the first case, the corn was all cultivated in the same manner, and without regard to the trial of this experiment. When the corn had passed from its milk state and become partially seared, ten hills were cut close to the ground; the stalks from another ten hills were cut off above the ear, and ten hills were left untouched. This corn was all harvested and husked at the same time, Nov. 7, with the following result by weight:—

10 hills, cut close to the ground, produced 13 lbs. 13 ozs.
10 hills, stalks cut off above the ear, " 13 lbs. 6 ozs.
10 hills, left untouched, " 12 lbs. 13 ozs.

showing a marked superiority in favor of cutting up close to the ground.

Again, another experiment, in another locality, was tried, with twenty hills of corn, and conducted in the same manner, with a more marked result, the test being by weight:

20 hills cut close to the ground . . . . . 29 lbs. 14 ozs.
20 hills, stalks topped . . . . . 26 lbs.
20 hills left untouched . . . . . 25 lbs.

or a difference between the two first of about 13 per cent. and between cutting up and leaving untouched about 17 per cent.

Still another experiment, between cutting up and topping, showed results yet more favorable to cutting up. A field was taken in which the character of the soil was the same, and the corn very even. Four rows were cut up, and four rows topped. Both were harvested at the same time, and on the 2d of November were husked in a bushel basket, each basket full being weighed with the following result:—

That cut up at the ground.

Row No. 1 weighed . . . . . 79 lbs.
" " 2 " . . . . . 72 lbs.
" " 3 " . . . . . 74 lbs.
" " 4, not full, weighed . . . . . 67 lbs.

Being in all 292

That with tops cut.

Row No. 1 weighed . . . . . 75 lbs.
" " 2 " . . . . . 73 lbs.
" " 3 " . . . . . 74 lbs.
" " 4, not full, weighed . . . . . 19 lbs. 13 ozs.

Being in all . . . . . 241 lbs. 13 ozs.

giving 50 pounds 3 ounces, or about 17 per cent. in favor of cutting up. But as there had been some claim made that the greenness of the corn affected the result, in this last experiment, the corn on the 17th of January was shelled, yielding by measure:—that cut up 3 bushels, 2 pecks, and that topped 2 bushels, 3 pecks, leaving a balance of 3 pecks of shelled corn, or about 21 per cent. in favor of cutting up; and upon weighing the same it still showed a balance of 47 pounds 7 ounces, in favor of cutting up. The difference by measure while in the ear was also in favor of cutting up by three pecks.

This last experiment was also carried still further to answer in some measure the claim that the fodder is much better where topping is practiced, than by cutting up. In this case such evidence as could be adduced went to prove that the stalks were equally as good throughout, as those taken from the top.

Another fact is to be considered. In many cases where topping is practiced, the corn is husked in the field directly from the hill, leaving the field to cattle to select such of the husks as are palatable, leaving a large share, which is saved by cutting up, to be trodden under foot, and so far as feeding purposes are concerned, entirely lost. And it is a question of no little importance whether the value of corn fodder is not greater where the whole is cut up at the proper time when the juices furnish the greatest amount of nutriment and before the lower portion is changed to woody fibre.

Baron Liebig has said that "All plants left in a natural state to mature their seeds, give back to the earth, in the form of excrementitious matter, a portion of their seed-forming substance, thereby diminishing the weight of the grain or seed." And certainly each of the above experiments furnish conclusive evidence upon this point. Nor is this all. Do not all farmers (perhaps without understanding the principle which lies at the foundation) cut their grains, oats, wheat, rye, &c., when it is just past the milk state? This is probably for the same reason, because they have discovered that when so cut they not only get a greater weight of grain but also a better quality of straw.

When matters become so plain that a wayfaring man need not err therein, certainly it is time that each one understands his best interests. If by cutting up our corn we can increase the yield seventeen bushels in a hundred, it stands us in hand to govern ourselves accordingly. W. H. Y.

Connecticut, 1871.

For the New England Farmer.

DRAINAGE ON LIGHT SOILS.

Mr. Editor:—Since you did me the honor to publish my communication referring to matters suggested by your able correspondent, Royal Smith of Millington, I have had opportunity to hear my broad theory as to drainage being applicable profitably to every sort of arable soil, confirmed voluntarily, and, to me rather unexpectedly. A few days ago while on my way to northern New Hampshire by railway, Ex-Gov. Smyth, of Manchester, in that State, came on board, and after friendly greeting, addressed me substantially as follows:—

"I thought of you within the last half hour. Do you remember, when at the State Fair at Keene, some eighteen or twenty years ago, you got up near the beginning of what threatened to be a very dull farmers' discussion on thorough draining, and made a statement that draining was an essential to every soil,—that the dryest land could be profitably improved through its use, and that you would tolerate no theorizings which either controverted indirectly or denied this proposition?"

Of course I recollected the circumstance, and the Governor went on to say:—

"Well, like many others present, I considered your statement in the highest degree extravagant, and thought, as they did, that you had advanced the idea for the purpose solely of provoking debate—which it was very successful in doing; and I have continued to think so until recently, when I have discovered, *practically*, that you were perfectly right, and your theory entirely reliable. And the way proof came to me was in this wise: I had a piece of wet land which I could only drain by running the trenches through a dry portion which, in my estimation, required no drainage at all. When the work was performed I thought of you and what I still esteemed to be your extravagant theory, not doubting in the least that my experience would ultimately knock the bottom out of it. I mentioned just now that I had been thinking of you within the past half hour, and that was while I passed over the light land I had drained compulsorily, and waded through the deep grass in the vicinity of the drains, while I noted that that on the undrained portion was stunted, burned up and valueless. I believe in draining light land, and that the process will pay."

Now I think this testimony, which was backed by that of Gen. Natt Head, President of the N. H. Agricultural Society, and one of the most enlightened farmers in the State, (the General had joined us at Hooksett, where he resides,) will show my intelligent friend Royal Smith, that there has been some method in my universal drainage madness, and I think he will rejoice in the information.

A Fireside Farmer.

Remarks.—Thanks to friend Moore for his testimony in relation to draining land. Our farmers, half of them at least, are not yet thoroughly convinced that draining any land is a profitable operation. Land is too plenty and too cheap, they say, to make it economical to expend $25 to $50 an acre in relieving it from surplus water.

We have often felt inclined to say as much as our correspondent has above; but upon reflection have concluded that there is so much land that needs draining more than other portions do, that we would urge draining that most needing it, and then strike boldly into his theory. But we are glad of his help.

The operations of the atmosphere upon soils are as yet imperfectly understood. When we know more about them, we are inclined to think that we shall learn that there are no varieties of land but may be brought into a state of comparative fertility at moderate cost, and one important agent in the work will be *atmospheric influences*.

USING FRESH MUCK.

We are often told even by those whom we regard as high authority that muck should never be used until it has been exposed to the weather a year, or after being composted with manure. I have had some experience with muck, and I do not agree with those writers. My first trial was made on a gravelly knoll, where I put a one-horse load fresh from the muck-bed. Sowed the piece to buckwheat. Where the muck was it grew very rank; lodged and rotted before the rest of the piece was ripe.

Since then I have tried it as a top dressing on grass land, and was satisfied that it doubled the crop the first year, but not so much benefit the second year as manure generally has. I have doubled the hay crop on my farm, and claim that I have done it by using muck, and have never used but a very little that has been out of the bed a year. I dug a ditch through the muck-bed, and since then when I have wanted to draw out a few loads, I have taken it from the side of the ditch and spread on the grass land. I do not say it is better used in this way, but I think it pays and saves some labor.

The best top dressing that I ever used was made by slacking lime with brine and mixing it with muck shovelled up in June, and spread late in the fall. It showed the effects for six years. I think that if farmers knew the value of lime, salt and muck, phosphate would be a drug in the market.—*Cor. Vermont Farmer.*

Remarks.—One great cause of the different opinions of farmers in relation to the effects of muck, is the different qualities of the muck used. The above writer has probably muck of superior quality, or that which is comparatively free from those properties which render most muck direct from the bed less beneficial than in his case.

THE NUTRITIVE VALUE OF MILK.

Dr. Oliver C. Wiggin, of Providence, Rhode Island, bears the following testimony to the value of milk:

The nutritive value of milk, as compared

with other kinds of animal food, is not generally appreciated. There is less difference between the economical value of milk and beefsteak, or eggs, or fish, than is commonly supposed. The quantity of water in a good quality of milk is 86 per cent., in round steak 75 per cent., in fatter beef 60 per cent., in eggs about 68 per cent. From several analyses, made last winter, I estimated sirloin steak, (reckoning loss from bone) at 35 cents a pound, as dear as milk at twenty-four cents a quart; round steak at 20 cents a pound, as dear as milk at 20 cents a quart. Many laborers who pay 17 cents for corned beef would consider themselves hardly able to pay ten cents for milk, when, in fact, they could as well afford to pay 15 cents. Milk is a most wholesome and economical food for either rich or poor. If the money expended for veal and pork were expended for milk, I doubt not it would be an advantage to both the stomach and pocket, especially during the warm season. Relatively speaking, then, milk at 10 cents, or even 12 cents a quart, is the cheapest animal food that can be used. Whether farmers can afford to produce it cheaper is a matter for them to decide. It is very probable that were they to ask 12 cents, a very large number of poor people would refrain from its use from mistaken notions of economy, notwithstanding they are excessive meat-eaters.—*Monthly Agricultural Report.*

WINTER MANURING FOR CORN.

The soil is a sandy loam, and grew potatoes the previous year. On a portion of the lot I hauled, early in February, at the rate of forty-seven loads of well-rotted manure to the acre, and spread it evenly over the surface on the snow. To the balance of the lot I applied the same amount and quality of manure to the acre, just before planting. I ploughed the ground about four inches deep, and planted the medium sized Yellow Dent corn.

The difference in growth and yield between the early manured and late was very remarkable indeed. The early manured was decidedly ahead of the late, from the time it came up till harvest. It ripened earlier, and yielded 160 bushels of sound ears to the acre, and the other 120 bushels per acre.

During nearly thirty years' experience, I have never, but once before this, obtained so heavy a yield; and I think it is about as much as can be obtained. The variety I plant yields three pecks of shelled corn to the bushel of ears. I select the earliest ripened, soundest and best formed ears for seed, and from stalks bearing two or more ears, if sound and large; but I never plant "nubbins."—*Cor. Rural New-Yorker.*

Surface Application of Manure.—An inquiry relative to "non-buried manure," whether deteriorated by the action of frost, &c., in *The Field*, London, is answered by another correspondent of the same paper as follows:

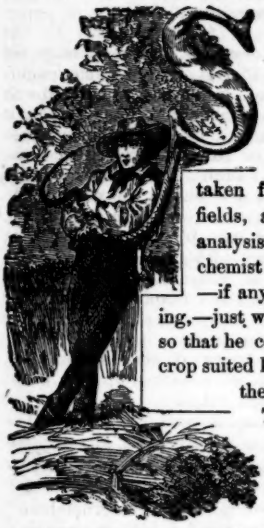
The same causes that produce ammonia from the fæcal matter generate an acid, called humic acid, from the straw. This relates to manure and its distribution. These having a mutual affinity unite, and the resulting compound is humate of ammonia, which is non-volatile, highly soluble; consequently every dew or shower carries with it this compound, which is distributed to the plant. The soil has the power to take it up from the water and store it away, giving it up again to the roots of plants as required. This plainly shows that manure laid on lands is better than if ploughed in six inches deep; moreover the humate of ammonia, being non-volatile, in my opinion, is not deteriorated either by the sun's rays or action of frost.—*Charles Joseph Whitworth, M. R. C. V. S. L.*

Tend the Corn Late.—A correspondent of the *Iowa Homestead* says sensible words as follows:—"Tend your corn *well*; tend it *late*—don't be deterred because a timid neighbor, who may like an excuse for neglect, says you will ruin it if tended when the blades curl up. This is all bosh; the blades will open as the sun recedes behind the tree tops, and your corn will grow apace. If you abandon your corn early, that inevitable late crop of weeds and grass will come upon your land like a cloud, and in place of corn you will reap nubbins. Therefore, we say, tend your corn late, and crowd it with a few tons of turnips, by having the late weeds and grass exterminated, your ground in a mellow condition, and sowing thereon a few pounds of turnip seed about the 20th of August."

Preventing Mildew on Gooseberries. A writer in *The Globe*, says: For the past six years, as soon as the grass will cut, say nine inches or a foot long, I have spread a quantity of new cut grass under my bushes, and let it remain all summer. That, combined with very high cultivation and close pruning, has been a complete preventive of mildew for the last six years. Whether this simple and inexpensive remedy will hold good on all kinds of soil, I am not prepared to say. One thing I can say, as all my neighbors can testify: I have had splendid crops of large sized, sound berries, some of them nearly as large as small plums. My soil is a sandy loam, with gravel sub-soil.

Adulteration of Milk.—Dr. Bates, health officer of San Francisco, in a recent communication, says: The common mode of adulterating milk for this market, is with water, burnt sugar and table salt, by which process the bulk is increased from one-eighth to one-half, and can scarcely be detected by sight or taste.

ANALYSIS OF SOILS.



SOME years ago the idea became quite general that the farmer could hand the chemist a quart or two of soil taken from any of his fields, and that by an analysis of that soil the chemist would tell him, —if anything were lacking,—just what to add to it, so that he could raise what crop suited his circumstances the best.

This was encouraging, to say the least, and some thought the fabled "philosopher's stone" had been found, which was to "turn everything into gold!" And it encouraged another class,—those who had little faith in farming,—but who, under this grand discovery would never miss securing a crop, and therefore would engage in the cultivation of the soil.

Analysis, therefore, soon became popular, and great expectations were entertained, even of the poorest soils. Much money was paid in order to learn the secret of success, and more careful attention and investigation given to the soil than was ever given it before, by those who handle it themselves. And thus the analysis fever was not without a beneficial effect.

Few common farmers now plod over the soil on which they are at work, in an unthinking and careless frame of mind; but look upon it as the store-house where their treasures are hidden; the generous soil that liberally responds to all fair and seasonable treatment. All this has been a decided gain in the art of cultivating the soil and securing paying crops.

The practical analysis of soils, however, has not met the expectations which were based upon it as a theory. The lime, for instance, is added, where the analysis declared it lacking in a soil devoted to wheat, but still the wheat crop does not prosper as it does on a new soil. And so in other cases; the laboratory does not furnish the information as to what we can apply to the soil to bring the crop we desire.

From what we learn of soils by reading the reports of those who have manipulated them in the laboratory, it appears that *four earths* are almost always the chief constituents of all cultivated soils, viz: silica (flint,) alumina (clay,) carbonate of lime (chalk,) and carbonate of magnesia. These are mixed together in an endless variety of proportions, and are interspersed with animal and vegetable remains, salts, &c., to an equally varying extent. It is to ascertain the presence and extent of these substances that the analysis of soils is resorted to.

But entirely beyond the knowledge which an analysis would afford, there is probably a combination of elements, and a principle of action going on in the soil, of which we know nothing and perhaps never shall know here.

Certain articles of food, as the potato, for instance, are analyzed and declared not to be nutritious, because they are made up of a very large proportion of water. The potato, it is said, cannot be very nutritious because eighty-three of its parts in one hundred are water; and yet that vegetable will probably sustain life longer than wheaten bread. If the water were extracted, life would be short if dependent upon what was left. And so we take it, it may be with soils. Some that are decidedly of a sandy character, produce crops that surprise every beholder. Something lurks in them which gives them fertility, and which, if taken away, however small in amount, would check or destroy its capacity for vegetable growth.

If soils then are made up as stated above, we ought to learn this lesson from that fact, viz: to mingle all soils by turning them together and pulverizing them much more thoroughly than we do. Then the particles which are the most essential can be acted upon by heat, air and moisture, and all have fair opportunity to act in conjunction and bring a crop.

COARSE-WOOL SHEEP IN MICHIGAN.

The *Port Huron Times* says that Mr. S. B. Carl of that township sheared eighty-three and one-half pounds of wool from thirteen sheep, a cross between the Cotswold and Leicester breeds, the pres-

ent spring. Eight ewes of the same flock had eleven lambs. The wool was thoroughly washed and dried before weighing.

Mr. W. H. Sotham, an Englishman now living in Michigan, after giving a description of some Cotswold sheep owned by L. P. Taft of Pontiac, of which one two-year old weather sheared seven and a half pounds of well washed wool, adds:—

I am inclined to believe that there is no better breed of sheep for profit than Cotswolds in America, and I am sure that no breeder of animals of any kind have made more money, or kept their farms in higher condition than the Cotswold ram breeders on the Cotswold Hills in Gloucestershire, England. Many of them have made an independent fortune. Those who do not breed rams, breed for the butcher, selling off their cull ewes, and wether tegs every year. By this course of breeding, they keep a very uniform flock of ewes, and go to the regular ram-breeders for their males. By this system they winter their wether tegs and cull ewes on turnips and good early cut hay, and in April or early in May, send them shorn to Smithfield. By this means the mutton and wool brings in a good yearly income, keeping their land in a high state of cultivation. I know a great many ram breeders and sheep breeders who breed for the butcher, as above, and I never knew one to fail. Good farming and sheep husbandry go hand in hand, and I cannot see why it will not answer in this country.

For the New England Farmer.

VERMONT BOARD OF AGRICULTURE.

This organization did not get into working order until toward the last part of winter; consequently as winter gives leisure to some farmers and long evenings to all, the Board lost what is considered the best time to hold meetings for the discussion of agricultural topics. Nevertheless Prof. P. Collier of the Vermont Agricultural College, and Secretary of the Board, with commendable energy, set about a new enterprise in this State.

The Board, on invitation, held a meeting at St. Johnsbury in April. The meeting was rather thinly attended, but some of the papers and discussions were published by the local press, and awakened some interest.

The Board were then invited to meet with the Brandon Farmers' Club, and also with the club at Randolph. A meeting was held at Brandon, June 8 and 9, and at Randolph June 15 and 16.

The Brandon Club have a good room, with fifty chairs, a library of 200 volumes, and meetings have been held quite regularly for twelve years. The Otter Creek Valley, in which the township of Brandon is located, is a good farming country, and it is evident that the farmers desire to do justice by their productive soil.

At Randolph, some of the subjects were the the same as those considered at the meeting in Brandon with the addition of papers on "The Management of Woodland;" "Farm Buildings;" "Ploughs and Ploughing;" "The great want of Vermont Farmers;" "Our Manufacturing Industries;" "Relation of Chemistry to Agriculture."

The importance of manufactures to our prosperity was very ably and eloquently set forth by Hon. C. H. Heath of Plainfield. Those present were profoundly impressed with the truth of his arguments, which made it evident that by a little effort, the water power of the State might be more fully utilized, the raw material in woodlands, quarries, and mines should be wrought by many more persons who would become consumers of produce, and producers of valuable commodities that would add to our wealth as a State.

The Board were entertained by the citizens with such open-hearted hospitality that they seemed to be the recipients of pleasure while they bestowed it on others.

Between the hours of meeting, teams, double and single, were hitched up and members of the Board taken to places where the scenery or farms were most attractive. The roads were splendid, especially the one that runs north through the village along the summit of a high hill, on each side of which were beautiful farms, old orchards, grand maple shade trees, &c. Here I saw the homes of some of the occasional correspondents of the NEW ENGLAND FARMER,—Rufus Nutting, George Nutting, J. J. Washburn and Col. J. B. Mead. The farming that comes in their experiences and observation must give them material for many more good articles for your paper. Although these are hill farms, they are nearly free from stone, and the fields are smooth and easily tilled.

The meetings here were attended by ladies as well as men. Gov. J. W. Stewart presided. The interest manifested by neighboring farmers was very encouraging to the Board.

Probably there will be another meeting at St. Johnsbury at the time of the State Fair in September. ZUAR E. JAMESON.

Irasburg, Vt., June 19, 1871.

For the New England Farmer.

THE MICROSCOPE AND POST-MORTEM EXAMINATIONS.

The value of the Microscope, and the importance of Post-mortem Examinations, as aids in our Investigations of the Diseases of Animals.

I have often seen in the columns of the FARMER, and in those of other agricultural journals, descriptions of diseased horses, cows, swine and other domestic animals, with a request in each case that the editor or some other person, name the disease and prescribe the best method of treatment. In some of these descriptions, mention is made of tumors, swellings, &c., situated upon, within or near some important organ, with difficult respiration, obstinate diarrhœa, extreme emaciation, &c., &c.

Now, each of these ailments or symptoms

of disease, with others which might be mentioned, may be and often are the effects of different and dissimilar causes; and hence, it is important that persons when describing either diseased or deceased animals, state minutely all the facts which may have a bearing upon the case. If this is not done, it will be difficult if not impossible to decide the question as to the nature of the disease, or prescribe the remedies most likely to remove it. But farmers cannot generally do this with the means now at their command. To do it they must avail themselves of some instrumentalities better than any which are in common use among them at the present time.

Permit me, then, to introduce to their notice that wonderful little instrument the *microscope;* also *post-mortem* or after death examinations, as the best means for acquainting themselves with the causes, character and proper treatment of the diseases to which their domestic animals are liable.

The microscope is an optical instrument designed to assist the eye in the inspection of minute objects. In its simplest form it is merely a double convex lens; but in the form adapted to the use of persons engaged in scientific pursuits, it is much more complicated. The microscopes employed by anatomists, physiologists, pathologists and naturalists, possess a magnifying power equal to many hundred diameters, and cost several hundreds of dollars; but instruments magnifying from one hundred to five hundred diameters, may be btained at a cost of five to twenty-five dollars; and these will answer the purpose of a farmer very well. Caution, however, should be used in the purchase of a microscope, for some of the articles sold under that name are entirely worthless. I would advise persons wishing to procure a good instrument to do so through the agency of a reliable physician or optician.

But, I may be asked, can a person of only a common education, by the assistance of a microscope, discriminate the various diseases which affect our domestic animals? No, not in every case; and yet, almost any farmer can by its aid determine whether or not the disease which may be threatening the life of his horse, cow, hog, sheep or fowl, or which may have destroyed one of his most valuable animals, was caused by worms or other parasites. And with such knowledge as he may easily acquire he can, by the use of a microscope, decide with a good degree of certainty respecting a tumor or a swelling which may have appeared on a favorite animal—whether it be cancerous or otherwise—whether it be malignant or benign.

As to the importance of post-mortem examinations, little need be said. They have done more for the advancement of medical science, than all other things together; and they will accomplish equally as much for the advancement of veterinary medicine and surgery, whenever they shall be frequently and skilfully made. Until that is done, *veterinarianism* will never become what its importance demands,—a science based on well established facts. Until that is done, farmers will continue to be, as they have heretofore been, the easy prey of ignorant and designing men, and their poor dumb animals will continue to become the victims of all the foolish and cruel quackery that foolish and cruel men can invent.

But we suppose most of the older farmers will continue to do as they have hitherto done, and as their fathers did before them; for farmers, like doctors and ministers, are apt to become stereotyped in their notions, and averse to the adoption of new ideas and practices. Therefore I address especially the young farmers who may chance to read what I have written, hoping that they may be induced to occupy an advanced position, not only as it regards the tillage of the soil and the cultivation of crops, but also, as it regards the care and management of the animals which contribute so much to their convenience and comfort, and constitute so large a portion of the wealth of every civilized country.

As the object of post-mortem examinations is to contrast the appearance of the several tissues and organs of the dead body with those of the living one, noting the various changes which disease has produced, it is quite important that a person have some previous knowledge of the tissues and organs when in a state of health. I would, therefore, advise young farmers to become well acquainted with the general, and also the minute appearance and structure of every part of the healthy animal. This can be done by a careful examination of slaughtered animals. A few books, also, which your family physician will gladly name to you, and, perhaps, aid you in procuring, will be worth more to you, and give you more real and permanent satisfaction than a whole library of the fashionable literature of the day. J. H. STEDMAN.

West Brattleboro', Vt., 1871.

SHOVEL MAKING AND GENERALSHIP.—In some remarks suggested by Mr. Greeley's late visit to the South, the *New Orleans Price Current* says, "the industrial doctrines professed by Mr. Greeley have subjugated the South. * * * We have always thought that Ames & Co., the greatest manufacturers of spades, shovels and axes in the world, did more to conquer a people who had not a manufactory of spades, axes or shovels, than any general of the Federal army. * * * No people can ever hope to be free that exchange staple productions, worth gold and silver, for commodities which perish in the use; nor who have to send abroad for the guns that they fight with, the food that they eat, and the very clothing that they wear."

MATTIE NEWELL, Bred by J. A. Harwood, Esq., Littleton, Mass.

There may be more extensive breeders of Short-horn cattle in the country than Mr. Harwood, but probably there are few who are more careful in selection or more judicious in the management of stock. We have heretofore figured several animals of his raising, and this week we present a beautiful sketch, taken from life by Mr. Page, of his four year old cow Mattie Newell. She is red and white, and was calved April 25th, 1867; got by Sheridan, 6179, out of Eva, by Backwoodsman, 226,—Ann Gwynne, by Prince Albert, 853,—Daisy Second, by Dandy, 50,—Daisy, by King Charles Second, 84,—Daffodil, by Sampson, (5081,)—Young Daisy, by Dandy, (1900,)——, by Wilkinson's bull, (2838,) ——, by Greathead's bull, (3936,) &c. Sheridan, 6179, was bred by Samuel Thorne; got by Sixth Duke of Thorndale, 4752, out of Bertha, by Duke of Thorndale, 2787.

TO MAKE CURRANT WINE.

For several years we made a ten-gallon keg of currant wine, of as good quality as any we have tasted, and is generally so pronounced by those who have had an opportunity to judge. The mode of manufacture is simple, and can easily be followed by any family having the currants and the disposition to make the wine.

The currants should be fully ripe when picked; put them into a large tub, in which they should remain a day or two, then crush with the hands, unless you have a small patent wine press in which they should not be pressed too much, or the stems will be bruised and impart a disagreeable taste to the juice. If the hands are used, put the crushed fruit, after the juice has been poured off, in a cloth or sack and press out the remaining juice. Put the juice back into the tub after cleansing it, where it should remain about three days, until the first stage of fermentation is over, and removing once or twice a day the scum copiously arising to the top. Then put the juice in a vessel—a demijohn, keg or barrel—any size to suit the quantity made, and to each quart of juice add three pounds of the best *yellow* sugar, and soft water sufficient to make a gallon. Thus, ten quarts of juice and thirty pounds of sugar will give you ten gallons of wine, and so on in that proportion. Those who do not like sweet wine can reduce the quantity of sugar to 2½; or who wish it very sweet, raise it to 3½ pounds per gallon.

The vessel must be full and the bung or stopper left off until fermentation ceases, which will be in twelve or fifteen days. Meanwhile the cask must be filled up daily with currant juice left over, as fermentation throws out the impure matter. When fermentation ceases, rack the wine off carefully, either from the spiggot or by a syphon, and keep running all the time. Cleanse the cask thoroughly with boiling water, then return the wine, bung up tightly, and let stand four or five months when it will be fit to drink, and can be bottled if desired.

All the vessels, casks, &c., should be perfectly sweet, and the whole operation should be done with an eye to cleanliness. In such event, every drop of brandy or other spirituous liquors added will detract from the flavor of the wine, and will not in the least degree increase its keeping qualities. Currant wine made in this way will keep for an age. We have some made in 1856 which is really an excellent article.—*Germantown Telegraph.*

GROWING AND SAVING CLOVER SEED.

Upon this subject Birdsdale, in his *Clover Leaf*, says:—It requires some skill in growing clover for seed, to understand how long to pasture and when to mow the first crop. Of course the season has much to do with its filling, yet the crop can be materially helped if managed as it should be. The large kind, if saved for seed, can be pastured till the 15th of June, and very close; then give it a coat of plaster, so as to give it a good start. The medium or common clover should be pastured till the 25th of June, or if mown, cut the same time, and be sure and get off July 1st. You can then look for a good yield of seed, and if later, your crop will not pay for handling. Give it a coat of plaster, and you will find it very beneficial, and particularly on light soil and if the season is dry. Be sure and keep your stock out of the clover saved for seed, as it will spoil the young plants. In cutting the seed, do not let it stand till dead ripe, as one-third will rattle off and be wasted. Cut when the head is handsomely brown and the stalk not quite dead; there will then be scarcely any waste, and the seed just as plump. Many people, in gathering clover seed, waste at least one-fourth in allowing it to stand too long before cutting. Cut with a mower or reaper—a mower is preferable—attaching a drag apron, and throw off in bunches of medium size and in windrows. Turn it over when the dew is on, so as not to rattle off the bolls. When thoroughly dry, you can thresh immediately, or put it away where it will keep dry, as damp clover is very difficult to hull, and at the same time it is impossible to get all the bolls from the straw.

CARE OF SUCKING COLTS.

Those who raise colts, usually exercise care in the selection of good stock to breed from; but a great many neglect to give the colts proper attention during hot weather, while they are running with dams. It is not uncommon to see those that were healthy and well developed in early summer looking puny and poor, and their hair falling off before autumn. The trouble arises from allowing the colt to draw milk while the blood of the mare is in a high state of heat from violent exertion.

When the dam is used in hot weather upon the farm or road, so as to heat her blood, the colt should never be allowed to suck until she has fully cooled off. Let him fill himself before the mother is put in the harness, and if it is important that he should accompany the dam, tie him at her side so that he will be unable to draw milk until he is liberated; for it is much better that he should go hungry a few hours than to take his food while it is in a fevered state.

If the mare is to make a long distance in a hot day, and return at night, it is best to leave the colt at home, and draw the milk from the udder by hand once or twice during the day and upon returning, then allow the colt to fill himself gradually as the milk is secreted.

Colts injured by heated milk seldom recover from it for a year or two, and many times never. They become reduced in flesh. get lousy in the fall and during the first winter of

their existence, when they need health and strength,—as, under any circumstances, this is the most critical period of their growth,—they have just life enough to move, and the second summer, the proper time for development, is spent in the recuperation of lost vitality.—*Horseman's Manual.*

GRADE JERSEYS FOR BEEF.

Rev. W. A. P. Dillingham writes to the *Maine Farmer* in praise of grade Jersey stock for beef. He says: "This winter I have fattened and killed two Jerseys, both grade animals. One was a three year old heifer that proved unfruitful, the other was a cow five years old, that proved unsatisfactory. They took on fat with remarkable facility. They each dressed off about five hundred pounds. I never fed animals that gained faster than they did. They uniformly ate their allowance, and none of it went to waste. A ton of hay and fifteen bushels of meal will make as many pounds of beef when fed to a grade Jersey as when fed to a grade Durham. After they were killed, the beef proved to be of unusual excellence. In fact, and to make a very modest statement, I never before had such beef on my dinner table. Its tenderness, its juiciness, its richness are in degrees of remarkable fulness. This beef seems to be as much richer than ordinary grades of beef in the market, as the Jersey butter is superior to common butter."

REMARKS.—As this statement is not in accordance with the general impression as to the fattening qualities of Jersey stock, we solicit the experience of others on this point.

AGRICULTURAL ITEMS.

—Striped snakes are now protected by Michigan farmers as "the only creature that will eat potato bugs with a relish."

—The Orleans County, N. Y., Agricultural Society have decided that horse-racing is not an agricultural exhibition, and prohibited it on the fair grounds.

—The *Rural World* says that the curculio is becoming almost as destructive to peaches as to plums. It is almost impossible to find a single peach uninjured by this insect some years.

—Utah is so oppressed with grasshoppers that a machine has been invented for their destruction, which is drawn by two horses, takes about a rod of land in its sweep, and makes hash of every grasshopper it comes in contact with.

—Horace Greeley was a great drawing card at the Texas State Fair. *Flake's Bulletin* says that one family "traveled three hundred miles, most of the way by private conveyance, simply that they might be at the Fair and see and hear Horace Greeley." The crowd was great, and it is pleasant to learn that among the thousands of people there was no case of drunkenness reported, and no disturbance of any kind. The farmers of Texas seem to be a law abiding people.

—For a salve for burns take equal parts of beeswax and newly churned fresh butter with a crumb of rosin. Simmer slowly till the moisture is out, and strain through a fine cloth. This will keep for any number of years.

—The *Rural New Yorker* reports that in New York, and apparently in the country, there is a strong disposition to make early sales of cheese, thus preventing a large accumulation of stock. The opposite plan was tried last year with very unsatisfactory results to holders.

—The difference in color between grapes grown on clayey soil and those grown on sandy soils is easily distinguished. Those on the former are darker and more glossy than the latter. On tests being applied the richer grapes are found to be those grown on gravelly soils.

—A sick cow, belonging to Mr. J. C. Converse of Southboro', was put in a fair way to recover, the other day, after having a wooden pin fifteen inches in length taken out from under her hide back of her shoulder blade. The cow doctor said that the animal swallowed the stick.

—There never was a better prospect for an abundant wheat crop throughout the West than this Spring forecasts. The growing wheat stands thick upon the ground; the recent rain and warm sunshine have given it a luxurious appearance, and made the fields look green and beautiful. Wheat growers predict the earliest harvest known since Illinois was settled.

—Henry Noble, of Pittsfield, Mass., has one of the most perfect dairy barns in the country. The barn is 85 feet long by 45 wide, consisting of four stories and basement, holds 80 tons of hay, will accommodate 44 cows, and has the modern improvements for steaming their food and supplying them with water. A novel invention of Mr. Noble's puts the cows under the necessity of hitching themselves when driven into the stalls.

—The Iowa *City Press* says that a boy named Debrie, living in Johnson county, was killed in the following manner a few days ago. He was ploughing with the lines over his shoulder in the usual way, when the team suddenly jumped and pulled him over the plough handles and he fell right in front of the plough. The team continuing to run, the edge of the plough passed across his face and actually cut his throat, severing the windpipe.

—The *Germantown Telegraph* mentions that the Trustees of the New England Agricultural Society have confirmed the action selecting Lowell as the place for holding the next fair, and that about $10,000 has been subscribed by Lowell people to have the thing a grand one, as they say down east; and very justly remarks: "If it prove to be

so, we should like to be there to see, because to carry out the word 'grand' in its true significance, the fair must be a good, old-fashioned 'cattle-show.'"

—The *Mirror and Farmer* says that on opening an ox belonging to Mr. R. B. Currier, Deerfield, N. H., that died suddenly after having worked all day, a piece of very slender steel hoop, from a hoop-skirt, about four and three-fourths inches long was found fast in the case that surrounds the heart, and the end of it pressing against the heart had worn a hole into it as large as a walnut and finally caused death by opening the blood vessels. It is supposed that it was raked up in the hay and so taken into the stomach, and forced its way through the integuments to the heart.

—A tanner in Wisconsin has sent portions of skins from different sheep which are penetrated by the beards of grain in considerable numbers, and says full one-half of the fallen pelts he collects are caused by beards. He finds they affect fine wool more than coarse wool sheep. He thinks these beards cause a great many diseases, such as coughs, rots, &c., and consequently death. He thinks the beards get into the wool by the sheep being around straw stacks, and says they are more common in prairie than timbered lands.

—The *Gardener's Monthly* says:—"The pruning of fruit trees when required should be proceeded with at favorable opportunities. We write *when required*, for in our climate more injury is done by the knife than by the neglect to use it. Gooseberries, for instance, are usually ruined by pruning. In Europe, it is customary to thin out the center to "let in the sun and air." Here it is the sun and air that ruin them by inviting mildew, and so the more shoots the better. Our country farmers are the best gooseberry growers, where weeds run riot, and grass and gooseberries effect a close companionship."

What he knows about Raising Corn.—Mr. David Petit, of Salem, N. J., asserts in the *Rural New Yorker* that last year he raised more than one hundred and seventy-nine bushels of clear corn to the acre, and says "I will add I *know* more than two hundred bushels of shelled corn have been—and can be again—grown to the acre; and when favored with an ordinary fair season a statement will be made at a suitable time, properly attested (as it seems to be necessary for the doubting Thomases,) or to verify the assertion, with very shallow cultivation, too." Great place, the "Jarsies!" And a great corn raiser that same David Petit!

Cure for Wasp and Bee Stings.—It is stated that "a good absorbent" will ease the pain of stings. "One of the best absorbing substances is lean fresh meat. This will relieve the pain of a wasp sting almost instantly, and has been recommended for the cure of rattlesnake bites. It has been used with marked effect in erysipelas." Dr. Beecher says the best thing is strong tobacco, made quite moist and applied to the part.

Rainfall in New England.—In a paper on "Meteorology" read at the late meeting of the Vermont Board of Agriculture at Brandon, Vt., Dr. H. Cutting of Lunenburg, said that the rainfall during twenty-four hours is rarely over one inch. Only seven times in twenty years in Vermont has two inches of rain fallen in twenty-four hours. In the South they have three times as much rain; while Vermont has three times as many rainy days. On an average, the rainfall of Vermont is forty-five inches, in one hundred and fifty-six rainy days in a year.

EXTRACTS AND REPLIES.

"GILT-EDGED BUTTER."

Will you or some of the readers of the Farmer please give the process of making and packing "gilt-edged butter" for market. Are there any books on the subject, and where obtained? By answering these questions you will confer a favor on a young farmer who wishes to make a good article or none. N.

Clarendon, Vt., June 13, 1871.

Having seen your remarks on gilt-edged butter, in the Farmer of June 10, I would like to inquire through your paper how it is made, and what packages are used? We Vermonters try, to say the least, to make good butter, and think we do, but I have never seen any one that could inform me what gilt-edged butter is, or how it is made.

Noble Grosvenor.

Vergennes, Vt., June 13, 1871.

Remarks.—The term "gilt-edged" was probably borrowed by dairymen from the vocabulary of note-shavers and money-changers, who apply the expression to the best notes or securities in the market,—possibly because some rich individual or firm may have once used writing paper with gold leaf on its edges. But neither gold edges nor superb penmanship are sufficient to constitute what is technically known as gilt-edged paper. Back of any process of manufacture is the reputation of the maker or signer for ability and punctuality. This gives the "promise to pay" its "gilt-edge"—this decides the value of the "paper," or obligation.

The same principle has followed the transfer of the expression "gilt-edged" to butter. Many people are more or less tender-mouthed as to butter, of the origin of which they have no knowledge; and a few are willing to pay an extra price for an article flavored with the good reputation of a well-known manufacturer. We have all heard of the man who always put on spectacles when he ate cherries, because it made them look larger! And the assurance that the butter which one eats himself, or offers to his friends, was made by an acquaintance,—perhaps a fancy farmer,—who is known to be scrupulously neat as well as skilful in every process, has its market value.

We were told that the highest priced butter alluded to by us a few weeks since, is made in a

dairy room with a marble floor; the milk, from fancy-priced and highly fed Jersey cows, is strained into porcelain pans; the cream is skimmed into glass jars; the temperature of the room is kept at a fixed point,—whether the mercury on the outside falls below zero or rises one hundred degrees above,—by pipes for hot or ice-cold water; and no soiled shoes or tainted clothing ever enter the apartment. The butter is delivered three times a week, *mostly to customers secured by the manufacturers themselves.* It is brought to market in neat stamps of from one pound to one-eighth of a pound each, as desired by the customer, which are wrapped in separate pieces of smoothly ironed cloth, and all covered by a napkin of beautiful diaper, and packed in a tin box. Of course, the appearance and flavor of butter thus made and packed, and thus frequently marketed, is all that can be desired.

We have no doubt that many dairywomen in the country can and do make butter about equal to that sold as "gilt-edged," but their distance from market renders it difficult if not impossible to deliver it in the fresh and perfect condition which can be done by the few fancy dairymen who live near the city; and this distance also, in a measure at least, excludes them from the "ring" of gilt-edged butter buyers. Still we believe that with extra care in manufacture and extra pains in hunting up customers, a much better price might be obtained by those who aim to "make a good article or none." We read about flowers that "waste their fragrance on the desert air;" and if the history of butter should ever be written, we presume that many a "gilt-edged" lump would be described that was sold for much less than one dollar a pound, or was consumed by those who would be unwilling to pay that price.

THE THREE-LINED POTATO-LEAF BEETLE.

I enclose two kinds of bugs which I find on my potato tops. Can you tell me what they are? A neighbor tells me one of them is the Colorado potato bug, but I hardly think it is so. F.

East Shelburne, Mass., June 12, 1871.

Remarks.—Your "two kinds of bugs" are one and the same creature in different stages of its existence, and is called by Mr. Harris the "Three-lined Leaf-beetle — *Crioceris trilineata*, — Olivier." It is not the Colorado potato bug, but an old acquaintance, and somewhat resembles the common striped cucumber bug. The Colorado has ten dark lines with intermediate stripes of much brighter yellow; the one you sent has only three dark stripes on a very dull yellow or brown ground, and is much smaller than the ten-liner, of which we have specimens sent from Indiana. Your striped beetle is the perfect insect. It passed the winter in the pupa state. After eating holes into the potato leaf a few days, it lays its oblong oval golden yellow eggs, which are glued to the leaves, in parcels of six or eight. In about two weeks grubs hatch from these eggs of a dirty yellowish or ashen white color, of a cylindrical form. They have the filthy habit of covering themselves with their own excrement, perhaps to shield their tender hide from the hot sun, or as a protection from their enemies. This is the *other* kind of bug you sent to us. When about two weeks old it creeps down the potato stalk, goes into the ground, and about the last of July or first of August throws off its pupa dress, becomes a beetle and lays its eggs for a second brood of grubs, which like the first brood, go into the ground where they remain till about the first of June of the next year.

POTATO BUGS.—SEASON AND CROPS IN WINDSOR COUNTY, VT.

Enclosed you will find specimens of bugs that are infesting our potato fields. What are they? They are pretty numerous in some places, and I think them new in these parts.

Yesterday was a rainy day; the first since snow went off on which it has rained all day. It has wet the surface of the earth two or three inches. The grass crop will be very light this year; not more than one-half as much as last year, unless we have rainy weather so as to keep farmers from cutting it.

The prospect for fruit is not very good; the intensely hot and dry weather having killed the young fruit.

Not being used to writing for the press, I shall not be disappointed if this finds a place in the waste basket. Henry B. Howard.

Randolph, Vt., June 19, 1871.

Remarks.—Your potato bugs are the same as those received from "F.," of East Shelburne, Mass., and we refer you to our "remarks" in reply to his inquiry. These beetles may be more numerous this year than usual, but they are no new-comers. More attention is probably given to insects on potatoes than heretofore, on account of the well-grounded fears of the appearance at the East of the Colorado ten-lined beetle, which is committing such fearful havoc in Ohio, Michigan and other Western States.

CRIBBING HORSES.

Having had the care of horses, more or less, for fifty years, I have had pretty good opportunities to watch both old and new cribbers, and have given the subject considerable thought and study. Most of the books on horses call cribbing a habit or vice and not a disease. Some speak of it as contagious; others say that it may be acquired, and some that it may be inherited. If I understand what these writers mean by these expressions I cannot agree with them, for I am satisfied that cribbing is caused by inflammation of the throat. This inflammation is produced, in my opinion, by compelling the horse to eat from a high crib, by obliging him to wear martingales, and by not giving him proper exercise.

By feeding from a high crib, the horse swallows his food with his neck curved unnaturally, and consequently with his throat more or less cramped; thus propucing an effect somewhat analogous to that experienced by ministers, lecturers, &c., who cramp their necks and throats into the position which is necessitated by the attempt to speak and read at the same time.

One thing that confirms me in the opinion that cribbing is the result of inflammation or irritation of the throat caused by swallowing food with the neck in an unnatural position, is the fact that I have cured cribbers in the first stages by lowering

the feeding box to a level with their knees, thus allowing them to take their natural position in masticating and swallowing their food. The beneficial effect of a tight strap around the neck of a cribber is, in my opinion, the result of the relief it affords to the irritated throat. I have never experienced any benefit from medicine, or any other treatment in case of confirmed cribbers. Hence as an ounce of prevention is better than a pound of cure, I would recommend low feeding boxes, and exercise in proportion to feed and condition of the animal.

E. RICHARDSON.

Fitchburg, Mass., June, 1871.

AGE OF APPLE TREES FOR BUDDING OR GRAFTING.

Having some four or five hundred young apple seedlings, raised with especial care, I would esteem it a favor, if you would inform me in your most valuable paper about them. They are not grown for sale, but to transplant for my own, or at least, my children's benefit. They are in the third year from the seed, and looking finely. Shall I have better trees in the end if I postpone budding or grafting them for another season or two, than if I have it done this summer? I do not wish to force their growth or hasten their period of fruitage at the expense of the best results by and by. I would be glad to know if giving age to their roots before budding or grafting will add essentially to their chance of becoming perfect trees.

S. B. REACH.

Providence, R. I., June 18, 1871.

REMARKS.—If the truth of the adage that "it is hard to learn old dogs new tricks," is applicable to the roots of the seedling which we wish to learn to feed a tree of a different kind; or if we avail ourselves of the practice of experienced nurserymen, our conclusion must be that budding or grafting should be done early, and that you will not gain anything by delaying another year or two longer, if your trees are of suitable size for budding. Budding, which is applicable to stocks of from one-fourth to three-fourths of an inch in diameter, has several advantages over grafting, which is usually performed where the stock is one inch or more in diameter. Budding is a much less laborious, or rather much more expeditious process than grafting; and if the bud fails, the operation is far less injurious to the stock than that of grafting. For either process the trees should be in a thrifty condition at the time the work is performed. Our impression is that nurserymen bud largely stocks two years of age, where the trees are on good soil, and from that up to four years of age,—but are governed more by size than age.

K. O. AND J. H. ON CORN GROWING.

I notice an article from K. O. He complains of some writer that thinks his statement is too indefinite. A farmer who writes to benefit his brother farmers ought to give his name, place of residence, his method of doing his work, with all the items of expense; also the number of acres under cultivation, with the income in bushels or pounds, as the case may be, with the market price of such products.

I would be willing to go a long distance to hear a discussion on farming, between Mr. J. H. of Shrewsbury, and Mr. K. O. of some indefinite place. I will make a definite point. K. O. says it has been a practice to put on from forty to forty-six cords of manure, worth as much as stable manure, then from fifty to seventy-five barrels of fish, and after this, an indefinite amount of manure in the hills. All this for an indefinite number of bushels of corn, and a crop of oats, at a two years' expense to raise them. Then go over the same indefinite course again for a second crop of corn and grain, with hay seed—(Does K. O. mean to be understood that he sows some or all kinds of *grain* and hay seed with his corn)—which completes the rotation (what a rotation)! and gives five or six crops of hay?

K. O. thinks it difficult to give corn too much manure. He says it must not be put in the hill. To be more definite he should have said it should not be put where the corn could be affected by it. He compares manure in the hill to rum in man. What an idea! Let us define. Give to every man a barrel of rum, he would soon kill himself, and the race would soon be extinct; but let the moderate drinker go to the saloon and buy a glass at a time, and he may live long enough to raise up quite a crop of drunkards. So with corn; you spread on some fifty cords, more or less, of manure, and you can raise a small crop of corn for years, but should you put that quantity of manure in the hills, you would probably burn up the crop at once. Let us keep some kind of a medium course. For instance, when more than sixty bushels of shelled corn are raised to the acre, we get beyond what is profitable.

There are several questions of magnitude involved in the article of K. O. which I should be glad to review, but I am limited to seventy-five minutes, at this time. If J. H. of Shrewsbury, and K. O. of somewhere, will continue the discussion in reference to the corn crop, I will willingly write my views over my own name. We three might form a triangle, that would give some kind of limitation, (as the surveyor of land would say) to the subject of the corn crop.

ROBERT MANSFIELD.

Wellesley, Mass., June 2, 1871.

BARK LICE ON TREES.

I wish to call the attention of farmers to the importance of destroying the bark scale both on pear and apple trees. It is not generally known how much injury is done by these small insects. Many orchards are almost destroyed by them, for want of due care. The oyster-shell scale is by many entirely overlooked, it being of nearly the color of the bark of the tree. The white scale is more visible and easier detected. In 1838, I began to exterminate them by a wash of potash, and succeeded to clear my trees that were overrun with both kinds. I continued it yearly, in the spring of the year, and my trees have not suffered since, while many others are complaining of the injury their trees are suffering. For the last three years I have used the crude wood ashes, unleached. I put about three quarts of ashes into a bucket of water, and mix it well, and with an old broom put it on the trees, rubbing them well with the broom. It leaves a quantity of the ashes on the tree, and every rain gives a new wash from the ashes left on the bark. I have found this a perfect remedy if done faithfully. It should be stirred often, so as to give a due quantity of the ashes to every tree. It may be put on at any time. But I would recommend April and August as the best times for application. The ashes and old broom are in possession of every one, so no excuse can be made for not exterminating the great evil of bark lice or scale.

S. A. SHURTLEFF.

Spring Grove, Brookline, Mass., 1871.

REMARKS.—We thank our correspondent for his valuable suggestions in regard to this evil. Per-

sons not engaged in the cultivation of orchards, have little idea of the damage annually done by these little insects, almost so minute as to be seen with difficulty by the naked eye. Their name is legion. While pruning last October, we found several trees in our own orchards with scarcely a branch upon them but was covered with the scales of these insects. Carefully removing a scale from the bark, and turning it upside down under the microscope, we could see from one to a dozen little white eggs. Harris says there are sometimes as many as 100 under a scale. They must be exceedingly minute to be so numerous in so small a space.

When a tree is badly infested, it has the appearance of decay all over it. If there are branches entirely free from the insect or scales, they bear the marks of disease. The limbs look dark and shrivelled, and are as expressive of illness as is the countenance of a sick animal.

These creatures cannot live upon air alone. It is probable that they puncture the bark and draw away the juices of the tree, so that the branches are deprived of their food, and they gradually die of starvation.

The remedy suggested by Dr. SHURTLEFF is a simple and cheap one, and would be useful to a healthy tree. We have a statement from a gentleman who made many careful experiments to prevent or to destroy these plagues. He found how to destroy them at last in the use of fish brine; that is, the brine in which mackerel are salted. This is slightly oily, and when diluted with water, is rubbed upon the branches with a cloth or with a broom. He also sprinkled the tender foliage and blossoms of apple trees, and found no injury resulting from it. This also, is a cheap remedy, and one easily applied.

Persons will do well to regard the suggestions of our correspondent, and not allow the month of August to pass without a thorough routing of the enemy.

THE DIFFERENCE.

Jones is a firm believer—hence
He manifests his faith
By works—in good substantial fence;
And this is what he saith:—
"I fence to keep *my* cattle *in*
And *other* folks's *out*;
I find no breechy cattle where
The fence is good and stout."

Smith's fences are of every sort
Found in the catalogue;
And all the shapes—the long, the short,
The running fence—or dog.
His cattle know no stated bounds,
But travel at their leisure,
In quest of food, the fields' wide rounds,
Out and in at pleasure. J. W. Z.

Maine, July, 1871.

GRASSHOPPERS IN MAINE.

For some time past we have heard remarks about the abundance of grasshoppers, and this week apprehensions of fearful damage are expressed. Their numbers are infinite, and though as yet only about half an inch in length, beans, peas, potato tops and such like disappear as though some fell destroyer had passed over them. I am not aware that they have been known to appear in anything like the present numbers at so early a day in this country. A farmer fifteen miles above this place, on the river, gave me to-day a glowing description of their depredations, from which I conclude that they are full as numerous there as here; and I learn by a lady that the same is the case about the same distance south of here.

With the severe dryness of the past season, and early part of the present, crops are not as promising as we would wish; but being one that thinks it better to look upon the bright side, and if possible to discover the "silver lining" of the darkest cloud, I do not expect that we all shall starve, even though the grasshoppers are coming, or have come.

O. W. TRUE.

Farmington, Me., June 27, 1871.

Ladies' Department.

From the Little Corporal.

BABY'S FIRST TOOTH.

BY PRUDY.

Come, look at the dainty darling!
As fresh as a new-blown rose,
From the top of his head so golden,
To the dear little restless toes.
You can tell by the dancing dimples,
By the smiles that come and go,
He is keeping a wonderful secret
You'd give half your kingdom to know.

Now kiss him on cheek and forehead,
And kiss him on lip and chin;
The little red mouth is hiding
The rarest of pearls within.
Ah, see! when the lips in smiling
Have parted their tender red,
Do you see the tiny white jewel,
Set deep in its coral bed?

Now where are the sage reporters
Who wait by hamlet and hill,
To tell the listening nation
The news of its good or ill?
Come weave with your idle gossip
This golden blossom of truth—
Just half a year old this morning,
And one little pearly tooth.

SEASONABLE RECEIPTS.

The following receipts are selected from the *Germantown Telegraph*. We should like to hear from some of our lady readers, to help keep this department interesting, as we feel sure that our New England housekeepers are quite as good cooks as can be found in any part of the country.

RASPBERRY VINEGAR.—Put a pound of very fine ripe raspberries in a bowl, bruise them well, and pour upon them a quart of the best white wine vinegar; next day strain the liquor on a pound of fresh ripe raspberries, bruise them also, and the following day do the same *but do not squeeze the fruit or it will make it ferment*, only drain the liquor as dry as you can from it. The last time pass it through a canvas bag previously wet with the vinegar, to prevent waste. Put the juice into a stone jar, with a pound of sugar to every pint of

juice; the sugar must be broken into lumps; stir it, and when melted, put the jar into a pan of water; let it simmer and then skim it; when cold bottle it. It will be fine and thick when cold, and a most excellent syrup for making a wholesome drink.

Red Currant Jelly.—The following receipt for making this jelly I have used for several years, and think it much better than any other I have tried or seen recommended: Put your currants in a bell-metal kettle and scald them well; when cool press them through a sieve, getting out all the juice, (be careful not to allow any skin or seeds to pass through the sieve,) measure the juice and put it back again in the kettle and let it boil hard for five or six minutes, skimming it well; then add while on the fire boiling one pound of sifted loaf sugar to every pint of juice; stir it till dissolved and then it is done and ready to put in the tumblers. It tastes much more of the fruit and is of a beautiful light color. Will keep for years if necessary.

Long Branch Berry Pudding.—One and a half cups of flour, one-half cup molasses, one-half cup of brown sugar, three pints of berries, (raspberries, blackberries or whortleberries,) one small half tumbler of water, and boil two hours. To be eaten with beaten sauce. Two eggs are an improvement, as they keep the pudding in better shape.

Curds and Whey.—Infuse a piece of rennet in a little boiling water as for making cheese; let it stand an hour or two; then put a tablespoonful to three pints of new milk warmed. Cover with a cloth and leave until the curd is thick. Press out and use the whey, or sweeten and use both whey and curd. This makes a very nice dessert for dinner.

Corned Beef.—In cooking corned beef, at this season of the year so delicious, it should be put into boiling water when put on to cook, and when it is done it should remain in the pot until cold. This is the whole secret of having corned beef juicy and full-flavored, instead of the contrary.

Cooking old Potatoes.—The following method of cooking old potatoes is highly recommended, and this is the season of the year to try it: Pare the potatoes about an hour before boiling, and then soak them in cold water until they are to be cooked. The water must be boiling before they are put in and a little salt must be added. When done the water is poured off and the pot is placed near the fire with the lid removed to allow the moisture to escape. The potatoes will be dry and mealy.

To Prevent Bread from Drying.—Keep a wet cloth around the loaf that is being cut from and wet every time after a meal. This will keep the bread in a fresh state.

To keep Butter in the Summer.—A simple mode of keeping butter in warm weather, where ice is not handy, is to invert a common flower-pot over the butter, with some water in the dish in which it is laid. The orifice at the bottom may be corked or not. The porousness of the earthenware will keep the butter cool.

To Preserve Flowers Fresh.—A vase of flowers can be retained in freshness much longer by using soapsuds or soaped water. Try it.

Sting of Insects.—An Indiana correspondent writes thus: Tell your readers that a few drops of coal oil dropped on parts stung by bees, wasps or hornets will give instant relief.

A NEW USE FOR OLD BULBS.

During a recent visit to a most delightful garden, I got a hint of a use for old bulbs, which may interest many of our readers. It must be remarked, first, that there are several extensive runs of holly and thorn fences, and a few bits of half-wild scenery in the place; and, further, that all the best early flowering bulbs are grown in exhibition style for the conservatory. It is the gardener's rule to buy every year for this purpose, and it is his rule also not to destroy a single bulb. He disposes of them in a short and summary manner. When they are done blooming, they are transferred to spare pits for the advantage of a little shelter, and of course they get a little water occasionally. As soon as mild weather occurs in the early part of April, they are all planted out in front of the green fences and in the borders and odd nooks of the wilder parts of the garden. The process of planting consists in opening holes and turning out the ball complete, without even removing the crocks from it. The result is that wherever you go in the spring of the year about this place you see thousands of snowdrops, crocuses, tulips, hyacinths and other equally beautiful flowers as they open in succession; and in a majority of cases they are really fine in quality, the crocuses and tulips especially. If a great heap of cut flowers are wanted there is no difficulty in obtaining them, and I was informed that a very great cut is made every year for the dressing of the parish church at Easter. The bulbs are not the only things that are naturalized in this way, for the banks and boundary lines are smothered with violets, primroses, several varieties of narcissus, and other equally desirable hardy plants, all of which have been turned out of pots when done with, instead of consigning them, as is usually done, to the muck heap.—*Gardener's Magazine.*

CORAL JEWELRY.

The Paris correspondent of an English paper directed the attention of sightseers in the late Exhibition to the brilliant display of coral jewelry from the establishment of an

eminent London jeweller. His cases contained specimens of every variety of natural coral, as well as of every ornament into which it has been wrought by art. The necklaces, bracelets, earrings, beads, bouquets, foliage, cameos and bas-reliefs were described as of the most elaborate workmanship, and exquisitely mounted. One of the necklaces was valued at something more than $2300 in gold.

This account may surprise readers who have never associated any idea of beauty with the manufactured forms of coral. It is no wonder, for taste and skill are not too plentiful in the world, and the jewels of this material which we commonly see are coarse, clumsily cut, and dear at any price.

To secure a different result several things are needed. Of the varieties of coral known to commerce the number, we believe, is fifteen. There are several which are totally unfit to be worked into the higher forms of ornament. A discriminating choice of material is the first step. The second is the determination of the form. For this an artistic taste is needed, which does not make part of the stock of every goldsmith. The third indispensable requisite is a skilful hand. The cutting must be at once sharp and delicate, and nothing is easier than to bungle.

Under certain conditions coral is an excellent material for art. Its beautiful color, the solidity of its tissue, its resistance to atmospheric action, and the fine and soft polish which it readily assumes combine to recommend it. But while human artists can work it into forms more convenient for our use, they can never hope to attain the skill of the little workmen under the water. Natural coral has brought before now twenty times its weight in gold. We believe that there is at present among the collection in the cabinet of Yale College a specimen which is unsurpassed in this country.

CHILDREN.

As for children, it is admitted that they are barbarians. There is no exception among them to this condition of barbarism. This is not to say that they are not attractive; for they have the virtues as well as the vices of a primitive people. It is held by some naturalists that the child is only a zoophyte, with a stomach, and feelers radiating from it in search of something to fill it. It is true that a child is always hungry all over; but he is also curious all over; and his curiosity is excited about as early as his hunger. He immediately begins to put out his moral feelers into the unknown and the infinite to discover what sort of an existence this is into which he has come. His imagination is quite as hungry as his stomach. And again and again it is stronger than his other appetites. You can easily engage his imagination in a story which will make him forget his dinner. He is credulous and superstitious, and open to all wonder. In this, he is exactly like the savage races. Both gorge themselves on the marvelous; and all the unknown is marvelous to them. I know the general impression is that children must be governed through their stomachs. I think they can be controlled quite as well through their curiosity; that being the more craving and imperious of the two. I have seen children follow about a person who told them stories, and interested them with his charming talk, as greedily as if his pockets had been full of *bon-bons.—My Summer in a Garden—Charles Dudley Warner.*

Little Things.—The preciousness of little things was never more beautifully expressed than by B. F. Taylor in the following: "Little words are the sweetest to hear; little charities fly farthest, and stay longest on the wing; little lakes are the stillest; little hearts are the fullest, and little farms are the best tilled. Little books are the most read, and little songs the most loved. And when nature would make anything especially rare and beautiful, she makes it little—little pearls, little diamonds, little dews. Everybody calls that little which he loves the best on earth."

Little Alice found out an ingenious way of getting to bed in a hurry. The crib in which she slept was so low that, by placing one foot on the inside, and taking hold of the post, she could easily spring in. "Mamma," she said to her mother, "do you know how I get to bed quick?" "No," was the reply. "Well," said she, in great glee, "I step one foot over the crib, then I say 'rats,' and scare myself right in."